

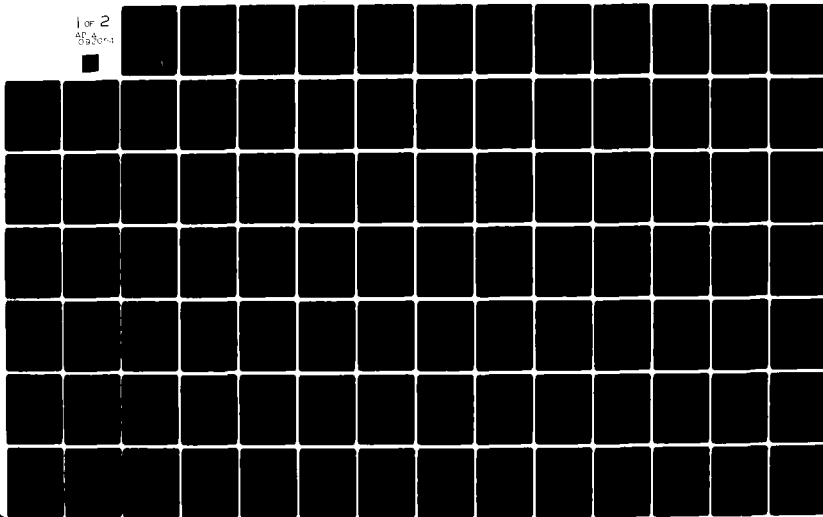
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MANAGEMENT BY OBJECTIVE IN THE AIR FORCE
TACTICAL AIR COMMAND TELECOMMUNICATION ENVIRONMENT

by

Freddie L. McLaurin, Jr.

B.A., California State University, Sacramento, 1972

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A thesis submitted to the Faculty of the Graduate
School of the University of Colorado in partial
fulfillment of the requirements for the degree of

Master of Science

Telecommunications

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Freddie L. McLaurin, Jr.

has been approved for the

Committee on

Telecommunications

by

Robert Williams

Robert J. Williams

S. W. Maley

S. W. Maley

Warren L. Flock

Warren L. Flock

Date 29 Nov. 1978

McLaurin, Freddie L., Jr. (M.S. Telecommunications)

Management by Objective in the Air Force Tactical Air Command

Telecommunication Environment

Thesis directed by Professor Robert J. Williams

↘ Maintaining a high degree of readiness is a critical factor in the performance of the Air Force's Tactical Air Command (TAC) telecommunication mission. TAC's telecommunication is contained in its Tactical Air Control System (TACS). To maintain its desired status and adequately perform its mission, TAC must have a system of management which combines the sophistication and technology of its telecommunication environment with the intricacies and complexity of human interaction. The system must be flexible, priority-oriented, efficient and effective.

The purpose of this thesis is to provide an analysis of Management by Objective (MBO) and its probable application as a management technique in TAC's telecommunication environment. MBO is discussed in detail so that the reader will have a sound understanding of the concept. The analysis effort is designed to examine possible problems related to implementation and operation that may assist in TAC's application of MBO.

↑

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Using TAC's Tactical Air Control System, this study concludes that MBO is an effective method for combining the TACS telecommunication environment and demands of management.

This abstract is approved as to form and content.

Signed

Robert Williams
Faculty member in charge of thesis

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I would like to extend my thanks to those many individuals at Lowry Technical Training Center, Tactical Air Command Headquarters, and Air University who provided their time, materials, and experience in assisting me in my research.

A special and loving appreciation to my wife and children, whose unlimited patience and timely assistance made this thesis a reality.

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CHAPTER I

INTRODUCTION

We live today in a highly mechanized, technical society. Spacemen are visiting the moon, airplanes are flying at four times the speed of sound, electronic computers are performing calculations in seconds which would take a hundred years to calculate manually. Our automobiles, home appliances, and electronic systems are the result of a revolutionary era of technological advancement. But, in this great society of ours, some aspect of this progress is creating a problem for managers.

Today's technology has advanced to a more complicated and sophisticated knowledge base. This has lead to the development of highly proficient technical specialists who must work as a team to develop or design the systems or products to meet today's complex technical, economic, legal and political requirements. Therefore, today's telecommunication manager no longer has the luxury or the enjoyment of direct participation in the purely technical work. To accomplish his mission, he must depend on teams of specialists to do the day to day technical work, while his time and energies must be directed toward other important areas such as administrative management duties. Although this situation exists with many of today's engineering/communication managers, it is a serious, complicated problem for the Air Force telecommunication manager.

Management by Objective System

The management technique used by many of our successful organizations in business and industry is Management by Objective (MBO). The concept will be fully developed in Chapters 2 and 3 but for the purpose here, MBO is defined as a management process whereby the supervisor and subordinate set goals in mutual perspective. MBO, as a system of management, affects all levels of management within an organization. The following list of characteristics show what effect MBO may have on an organization. It:

Causes a re-examination of the organization mission.

Stimulates planning in determining where the organization is going.

Forces a determination of key result areas and priorities.

Generates development of specific objectives and action plans describing what, when, and how.

Insists on directing, controlling, reporting, and measuring final results.

Simply stated, MBO prompts management in steering the organization to do the right things--not necessarily only doing things right. A unit may perform their tasks correctly but may not be contributing fully to the total organizational effort.

Basis for MBO in Air Force Telecommunication

Air Force Manual (AFM) 25-1 entitled "USAF Management Process" provides the philosophy and policies that form the framework of the

Air Force Management process. Its theme is that good management is essential to maximum effectiveness in performing assigned Air Force missions.

On examination, one sees that the stated philosophy and definition of Air Force management contains all the elements necessary for a successful program.

1.2. Air Force Management Philosophy. The management philosophy of the Air Force, evolved from years of systematic thinking about Air Force activities and their management problems, can be summarized in seven tenets:

- a. Management is an inherent responsibility of command.
- b. Management policy must assume progressive achievement of overall Air Force objectives.
- c. The greatest effectiveness possible with available resources must be constantly achieved.
- d. Decentralization of operation is essential to optimum utilization.
- e. Centralization of resource control is essential to optimum utilization.
- f. Maximum effectiveness can be achieved only if people are recognized and respected as individuals.
- g. Confidence in the Air Force must be maintained by demonstrated managerial ability and individual integrity . . .

2.1 Management - A Means to an End.

- a. For Air Force purposes, management may be defined as the process of organizing and using resources to accomplish predetermined objectives . . . the effectiveness of an operation is the extent to which it reaches its objectives.¹

Objectives, decentralization, responsibility of command, respect of individual, effectiveness--all of these elements are vital parts of a successful management by objective system. The

point here is that the Air Force has the foundation necessary for obtaining the best possible results in managing its personnel and resources. However, stated policies when not organized as a system of management are very ineffective in the day to day management of the complex and sophisticated telecommunication environment.'

Recent world developments have placed heavy demands and responsibilities upon military units. As a result, in some units it is not uncommon for a manager to receive a task or objective but not the proper resources, personnel, or authority for its performance. The nature and mission of the Air Force Tactical Air Command (TAC) telecommunication units makes them especially susceptible to this type situation. Combined with this situation are problems of critical priorities, limited resources, and changing environment. The result of these conditions is that the TAC managers are being forced to "management by crisis."

Take, for example, a radar unit within TAC's Tactical Air Control System (TACS). The TACS is composed of facilities, personnel, sensors, and communications through which the Air Force Component Commander plans, directs, controls, and coordinates available resources to conduct tactical air operations. TACS is a light weight, mobile system designed to be capable of rapid deployment for use in any land area throughout the world in accordance with the mobility requirements of tactical operations. The equipment is capable of being transported by land, sea, or air in a light-weight modular configuration that will permit mission achievement during various stages of

deployment in areas where access cannot be provided directly by truck or fixed wing aircraft.²

One of the smaller radar units within TACS is the Forward Air Control Post (FACP). It is a highly mobile radar element which is subordinate to a large radar unit. An FACP is normally deployed into forward areas to provide positive control of offensive air operations, early warning, and gap filler service. These units are highly mobile with a compact design for rapid deployment.³

Figure 1-1 shows a basic block diagram of TACS with an FACP. There are eight of these FACP's deployed throughout the United States. Each unit, to a certain degree, is self sustaining.

When an FACP is deployed with its AN/TRC-97A Tropospheric Scatter Radio Set, then it will be the unit's primary ground-to-ground communication media. The TRC-97A, which is a solid state radio terminal, provides line of sight, obstacle differentiation or troposcatter modes of operation. Operating in the 4.4-5.0 GHz, it provides full duplex, multi-channel voice, data or teletype communication over ranges of from one to one hundred miles.⁴

Admittedly, it is sound management logic to expect units to maintain a state of readiness or proficiency by training on their respective equipment. However, with TAC's FACP TRC-97A, there are ample regulations, directives, and reports outlining why, who, and how much training is required on the set. Unfortunately, no one has addressed the point of "how to" train. This problem becomes acute when one realizes point-to-point ground communication can only

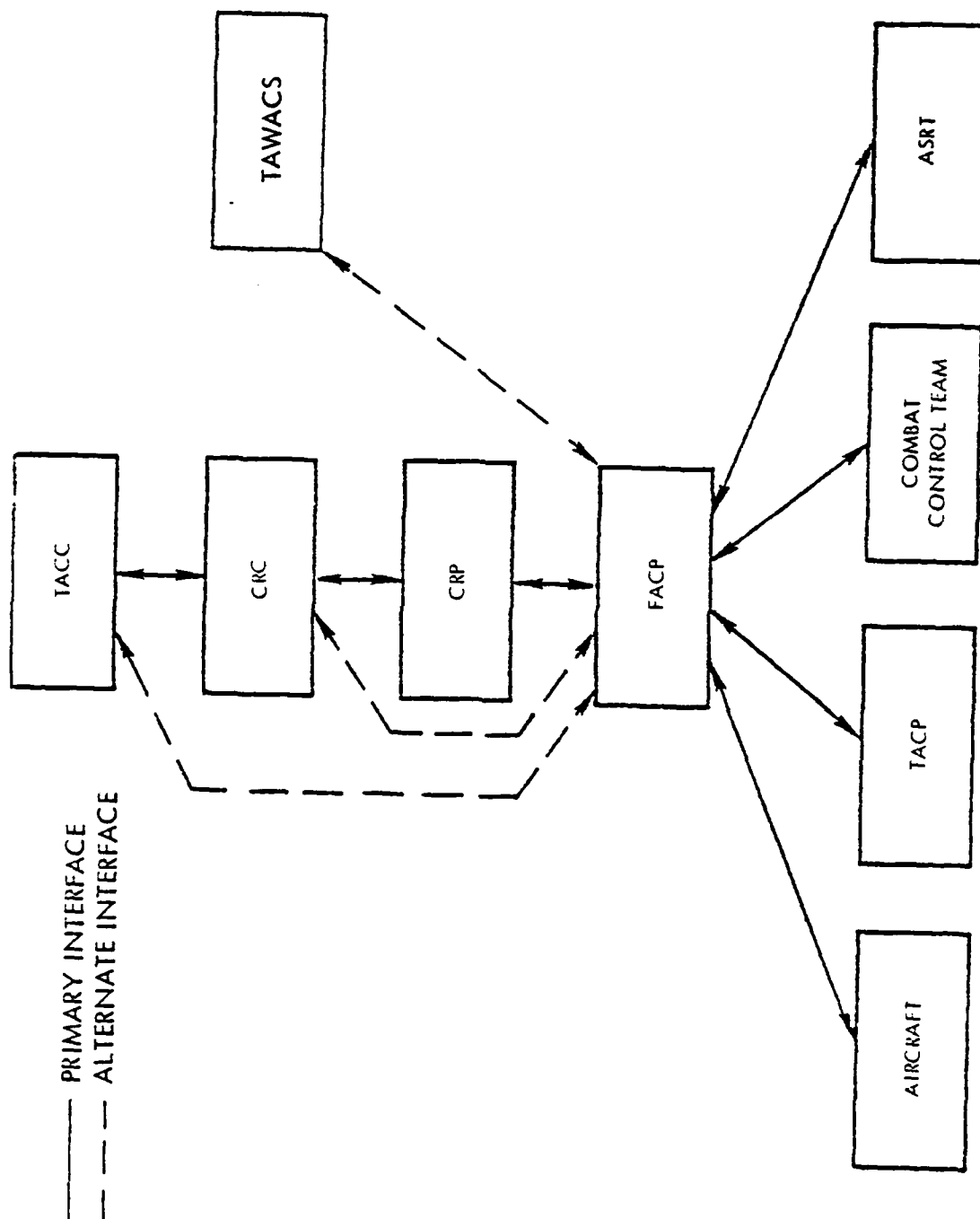


Figure 1-1. FACP Interfaces.

be accomplished with two TRC-97A sets. Yet, each FACP has only one set assigned and the units are located geographically beyond the TRC-97A operating range. Therefore, training can be done only when one unit deploys its set to within range of another unit's set. Since higher echelons have not provided a system or approach which unites all managers to common goals, it is difficult at lower levels to determine when, where, or with whom a unit should deploy.

Another aspect of this problem is the nature of the equipment. A manager considering deployment must contend not only with atmospheric conditions but also the normal unscheduled malfunctions that develop when using sophisticated and complex electronic equipment.

Further complications are encountered in the resource (personnel, material) allocation. Units are only authorized the resources necessary for wartime deployed situations. However, greater resources are required to perform the training mission because a unit is only deploying a single element and usually to an uncontrolled non-military community.

The TRC-97A situation is far from unique in the TAC telecommunication environment. It is merely representative of the type conditions created where units have complex equipment with a changing environment and high priorities. Although these conditions by themselves are manageable, combined with the lack of a unified management system they become breeding grounds for poor management techniques.

Objective of the Report

This study is limited to an analysis of MBO in the Air Force Tactical Air Command (TAC) telecommunication environment. The prospect is evaluated by contrasting MBO in a static Air Training Command (ATC) situation with the flexible TAC environment. The objective of this approach is to develop answers for the following questions. Is MBO a possible management tool for TAC telecommunication/radar units? What are the implementation problems? What does it take to sustain an active program? Because the analysis is applied to a peacetime environment, it will examine the feasibility of improving TAC's effectiveness under these circumstances. However, this improved effectiveness will increase TAC operational readiness ability in meeting any contingency.

Chapter II provides a review of some MBO concepts. Chapter III will outline, by example, how MBO is applied within an Air Force ATC unit. Chapter IV will cover concepts, implementation, benefits, problems, and disadvantages of MBO in a TAC unit, based upon the analysis and the author's personal experience within this environment. Chapter V will present conclusions with recommendations for present and future consideration.

CHAPTER I FOOTNOTES

¹Department of the Air Force, USAF Management Process, Air Force Manual 25-1, 1964, pp. 1-2.

²Department of the Air Force, Tactical Air Force Operations--Tactical Air Control System, Air Force Manual 2-7, 1973, pp. 2-1.

³Ibid., pp. 3-5.

⁴Department of the Air Force, Communication-Electronics Equipment Directory, Air Force Pamphlet 100-14, 1973, pp. 2-97.

CHAPTER II

REVIEW OF MBO CONCEPT

Background

During World War II, a study was performed on the buying habits of housewives in the United States. After an evaluation of their motives and desires for purchasing various items for their "budget," it was found that housewives actually planned how they were going to spend their limited resources. Then they would purchase the goods which they felt were necessary. During this process they also carefully plotted how they were going to allocate their income, time, and other resources. This approach was identified as "buying by objectives." Later, the popularization of the phrase Management by Objective (MBO) began when it was found that managers, as they conduct their managerial responsibilities within organizations, do essentially the same thing as the shopping housewives.

Peter Drucker was probably the first author and educator to specifically refer to the subject as "Management by Objective." In 1954 he wrote,

What the business enterprise needs is a principle of management that will give full scope to individual strength and responsibility and at the same time give common direction of vision and effort, establish teamwork, and harmonize the goals of the individual with the common weal. The only

principle that can do this is Management by Objectives and self-control.¹

Also, General Electric in its reorganization plan of 1954 introduced the elements of MBO. The company pointed out at that time:

Decentralization of managerial decision-making requires that objective goals and objective measurements of progress toward these goals be substituted for subjective appraisal and personal supervision. Through a program of objective measurements, managers will be equipped to focus attention on the relevant, the trends, and on the future. To the extent, therefore, that we are able to develop sound, objective measurements of business performance, our philosophy of decentralizing authority and responsibility will be rendered more effective.²

Numerous authors and educators followed these earlier leads. For example, Douglas McGregor, in 1957, made a strong plea for appraising on the basis of present objectives. In his paper he criticized systems which required the manager to pass judgment on the personal worth of subordinates, thereby "playing God."³

In 1961, Edward Schleh suggested, in his book Management by Result, that "management objectives state the specific accomplishment expected of each individual in a specific period of time so that the work of the whole management group is soundly blended at a particular moment of time." He also said that "Objectives should be set for personnel all the way down to each foreman and salesman and, in addition, to staff people such as accountants, industrial engineers, chemists, etc."⁴

Dr. George Odiorne published a book entitled Management by Objectives which has received wide distribution among managerial personnel throughout this country. Odiorne's book can be referred to as an operational approach to describing how MBO works in an organization.

There is an almost endless list of other authors and writers who have contributed to the MBO literature. Therefore, singling out the basic contributions of Drucker, G.E., McGregor, Schleh, and Odiorne may be unfair to their many predecessors and successors. However, these writers were identified because their work has been the foundation from which others have either developed or refined their ideals.

Definition

The greatest challenge to any manager is the requirement to coordinate, integrate, and direct human effort, resources, and facilities toward achieving common goals while avoiding discord and common disasters. Although telecommunication managers have attempted various approaches at meeting this challenge, each attempt, because of the industry's rapidly changing technology and product complexity, has produced limited success. However, with MBO, there appears to be a system whose design is aligned with the problems and nature of the telecommunication industry.⁵

There are almost as many definitions of MBO as there are writers, practitioners, and theoreticians who have concerned themselves with the subject.

It is defined by Dale McConkey as:

MBO is a systems approach to managing an organization--any organization. It is not a technique, or just another program, or a narrow area of the process of managing. Above all, it goes far beyond mere budgeting, even though it does encompass budgets in one form or another.

First, those accountable for directing the organization determines where they want to take the organization or what they want it to achieve during a particular period (establishing the overall objectives and priorities).

Second, all key managerial, professional, and administrative personnel are required, permitted, and encouraged to contribute their maximum efforts to achieving the overall objectives.

Third, the planned achievement (results) for all key personnel is blended and balanced to promote and realize the greater total results for the organization as a whole.

Fourth, a control mechanism is established to monitor progress compared to objectives and feed the results back to those accountable at all levels.⁶

Another writer, George S. Odiorne, describes MBO in his book Management by Objective simply as "a system of management whereby the superior and the subordinate jointly identify objectives, define individual major areas of responsibility in terms of results expected, and use these objectives and expected results as guides for operating the unit and assessing the contribution of each of its members."⁷

Additional definitions are provided by executives who are already practicing MBO.

James O. Wright, President of Federal-Mogul Corporation, explains MBO as:

First, decide what the broad objectives of the company should be. These are the strategic goals. They involve such basic questions of policy as: What profit return should be aimed for? How big do we want to become? What products should we sell? In what markets?

Next develop operating plans in each functional area as the means of reaching the broad objectives. This involves determining what plants to build, and where, and how; where the money is to come from, and what kind; how the market will be reached; and what R&D effort will be required--all this, of course, being spelled out in detail. Full consideration, too, should be given to planning the development of people who will have the needed managerial and technical skills.

Then all members of management down through first-line supervision should be acquainted with what's expected of them in carrying out the plans...

Finally, use the coach-and-counsel method in helping subordinates plan their part as the plan goes into action.⁸

Another definition given by Arch Patton of McKinsey and Company:

Companies that have explored ways and means of providing specific goals for their executives have tended to adopt an approach designed to integrate the short-term goals of individual executives with company objectives. In its simplest form, this goal-setting effort involves three key steps:

1. Developing long- and short-term company or division goals, both tangible and intangible.
2. Assigning specific responsibility to functional executives between superior and subordinate.

3. Reviewing results at the years' end, giving adequate weight to the difficulty of accomplishments and preserving a reasonable balance between tangible and intangible goals.⁹

Finally, Harlow H. Curtice, then-president of General Motors provides the following definition of MBO:

It is really an attitude of mind. It might be defined as bringing the research point of view to bear on all phases of the business. This involves, first, assembling all the facts; second, analysis of where the facts appear to point; and third, courage to follow the trail indicated, even if it leads into unfamiliar and unexplored territory.¹⁰

Thus, the definitions run the gamut from a few simple sentences to several sophisticated paragraphs.

Although there may be many definitions for MBO, they all contain the same fundamental strategy. Basically, they describe MBO as the process of deciding where it is you want to go (the goal/objective) and then finding some way to reach the goal. Part of the definitions also include some way of quantitatively defining the target, so that it can be measured when it is reached.

From its definitions, Management by Objective has given the basis why it is considered by many as an effective management technique.

Basic Elements

As a management technique, MBO contains four basic elements: objectives, time strategy, total management, and individual motivation.

Objective

This element covers the events or accomplishments which are planned and expected to happen. They may be classified as jobs or organizational results which a unit is working towards. For example:

- To achieve an antenna on-the-air rate of 98% is an example of an operational objective for a radar unit.

- To reduce civilian employee absenteeism from 15 to 7 percent is an example of a personnel management objective for a government agency.

Time Strategy

Time strategy refers to the schedule for combining the activities and operations of each manager so that long- and short-range results may be achieved. It is based on the ideal that by coordinating resources with the calendar, then each manager will know when to propose, act, and accomplish at the desired time. For example:

- Achieving a 12 percent reduction in operating expense within the next two operating quarters by all electronics sections is an example of a schedule for coordinating and collecting the contribution of each manager.

- Completing winterization of all self-propelled vehicles, MA35A1, within the next three months by all FACP (is another example of time strategy).

Total Management

This element is the foundation of the MBO concept. It refers to the formalized effort to involve and coordinate the actions or activities of each manager toward a common goal. For example:

- An FACP needs an internal management system to coordinate radar, tropo, radio, power equipment, vehicle, teletype, technicians, operators, administrative and supply personnel.

- TACS (Figure 2-1) requires a similar management system to utilize and coordinate to the fullest extent the contributions of Control Reporting Center (CRC), Control Reporting Post (CPR), Direct Air Support Center (DASC), Forward Air Control Post (FACP), Tactical Air Control Post (TACP) units.

Individual Motivation

Individual motivation identifies the aspect of personal involvement in the objective-setting process and in the desire or willingness to achieve. The strategy of this element is that with individual commitments and subsequent accomplishment, a higher degree of satisfaction is attained. For example:

- A unit maintenance manager is highly motivated when allowed to participate in all aspects of his unit's operations--operations such as maintenance, deployment, mobility operation, and administration.

TACTICAL AIR CONTROL SYSTEM

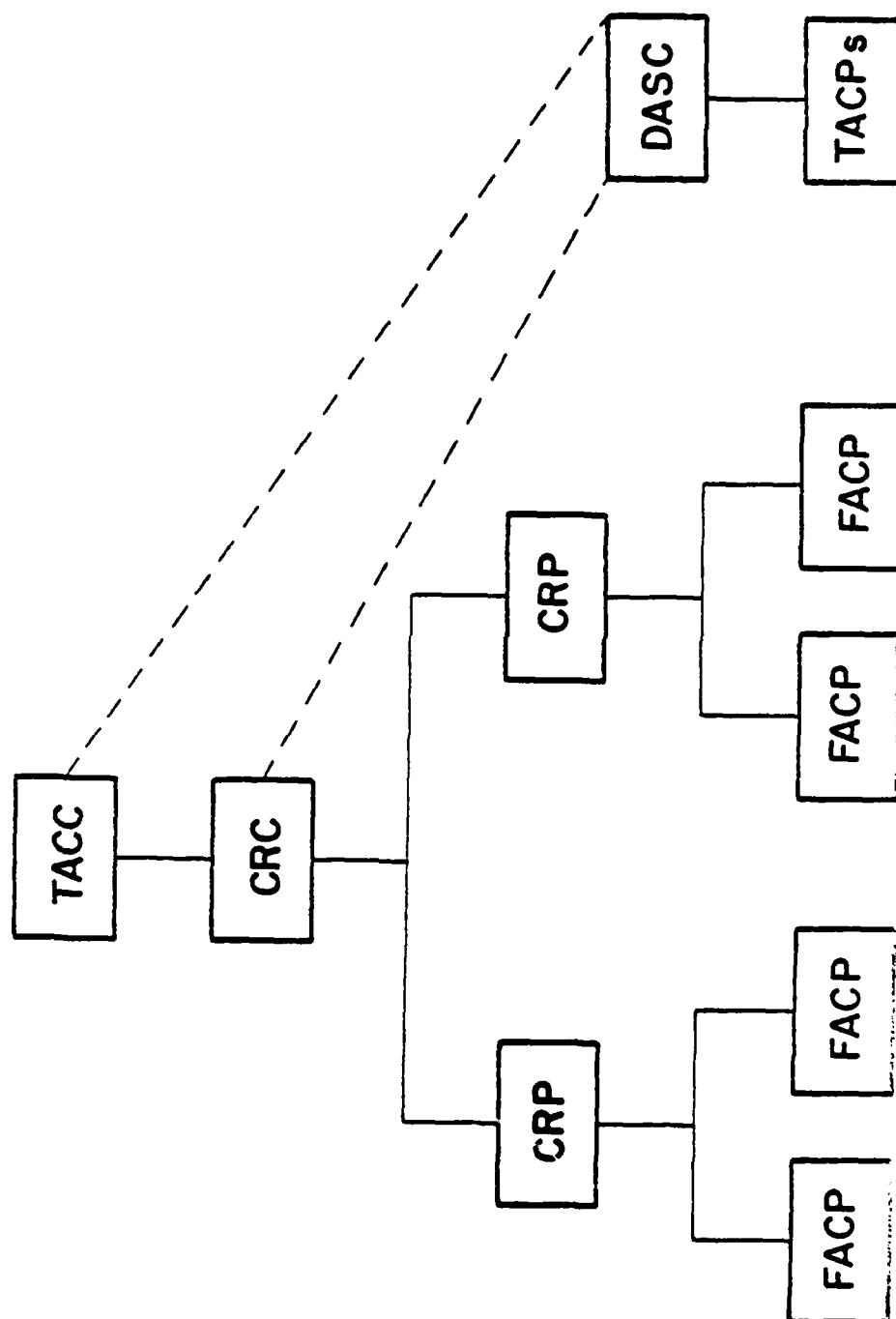


Figure 2-1. Tactical Air Control System

- A radar maintenance supervisor is motivated when allowed to participate in the many aspects of the total radar environment such as maintenance, new equipment acquisition, training, quality control, and equipment performance analysis.¹¹

These elements form the basis for four fundamental principles of operation of MBO. These principles are:

1. Unity of managerial action is more likely to occur when there is pursuit of a common objective.
2. The greater the focus and concentration on results one wants to achieve on a time scale, the greater the likelihood of achieving them.
3. The greater the participation in setting meaningful work with an accountability for a result, the greater the motivation for completing it.
4. Progress can only be measured in terms of what one is trying to make progress toward.¹²

Operation

There are five functions in the operation of the MBO process. Operationally, each function is viewed as a phase carried out in a sequence of steps to be taken in a certain order. Examples of these phases will be provided in Chapters III and IV. The following five main phases are sequentially related to give the MBO process a start to finish cycle:

1. Planning
2. Setting the objective
3. Performing
4. Controlling
5. Evaluation

Because the operational process of MBO is sequential, repetitive cycles can be generated making the process unending.¹³

Phase 1. Planning

This phase should start at the highest level of management within an organization. It involves deciding where you want to go and what will be the basic goals for accomplishing work. Earlier steps begin with an examination of the organization as it is now constituted. Later steps involve a deliberate and systematic identification of results needed by the unit for its survival, growth, improvement, or problem solution. A manager should allow this function extra time, analysis, and attention, since it is at this point that side tracking or incorrect direction can be noted, stopped, or corrected.¹⁴

Phase 2. Setting The Objectives

During this phase, decisions are made about how you are going to marshall the human, physical, and other resources necessary to accomplish the task or objective. By uniting the management team and its resources in a form of participation until a formal statement of objective is developed, this phase relates the resources to the involvement of those expected to deliver the results. The success of this approach is based on the ideal that, if you want to get maximum results from people, get them involved and accountable for these results.¹⁵

Phase 3. Performing

There are two key steps in this phase. First, the statements developed in Phase 2 are validated by translating them into a statement of commitment. This validation procedure will assure that the resources, facilities, materials, methods, people, and management are ready and willing to reach a desired goal. Later in this step, job plans and activities, needed for accomplishment of the commitment, are developed. The second step is the actual performance of the objectives. Developed plans and activities are initiated. It is during this phase that some objectives may be discarded as unattainable or unworthy.¹⁶

Phase 4. Controlling

This phase insures that responsibilities are carried out in accordance with the desired plan. It is this function for which a manager will be directly accountable. Although the controlling phase may sense deviations of actual from expected progress, it is the next phase which gives the management team the best appraisal of their present position relative to where they are going.¹⁷

Phase 5. Evaluation

The evaluation phase, which is the final step in the management process, is based on the ideal that progress can only be measured in terms of what one is trying to make progress toward. It involves looking over the work that has been done and determining whether it meets the basic objectives, standards, and criteria set

forth in the original plan. To give the management team an idea of their present position in relation to where they are going, techniques of feedback (measurement of past progress) and feed forward (measurement of expected future progress) may be used.¹⁸

Although these phases have briefly outlined the basic operating functions of the MBO process, there is another factor which affects the overall operation. This factor, time schedule, is what makes MBO an effective and efficient management tool. It is based on the principle that plans without an expected completion period are dreams. Basically, a time schedule encourages an organization using MBO to not only get results but also within the desired time frame.

In summary, the operation of MBO may be compared with playing a football game.

The football goal posts are in clear view of the individual players. This is analogous to the organization's objectives. The field is marked in yards so a player can gauge whether he is making progress toward these goal posts. This is analogous to a breakdown of the organization's objectives to milestones of progress. The offensive team as they huddle and decide on a tactic for yardage is analogous to management's planning work activities and job actions to accomplish objectives. The actual carrying of the ball and the teamwork necessary is analogous to the implementation and performance of work. The defensive team's opposing and frustrating the yardage to be gained is analogous to the constraints within and without an organization. Finally, the game goes by the tick of the clock. Just as there are only so many minutes to play, there is only so much time for the organization to get results.¹⁹

System

The greatest aspect of MBO is not its ability to set or meet objectives but its systems approach to management. By definition, "a system is a purposeful, organized interrelationship of components in which the performance of the whole exceeds the individual outputs of all the parts."²⁰

In management a systems approach is used to enable the manager to develop a "model" where he can better visualize his organization. The model, being a representation of reality, helps the manager to see the whole, the parts, and their interrelationships. By emphasizing the way in which subsystems interrelate in contributing to total system objectives, a model also forms a framework for decision making. In essence, without this mentally constructed model of his organization, a manager may not be able to make sound decisions.²¹

The nature of the MBO system becomes clear when the phases are viewed as a combination of actions (or components) that act as a whole, thereby causing something to happen. The components of an electric doorbell and its operation provides a good example of a similar type system. "The components in this case are a power supply (electricity), a conducting medium (electrical wire), a triggering mechanism (the button), and an action vehicle (the bell mechanism)."²² If all four components are present and performing their proper roles, then the desired results, the ringing of the bell, occurs. In the case of MBO, the system comprises planning, setting the objectives, performing, controlling, and evaluation.

The absence or poor performance of any one of these functions will make the system ineffective.²³

In summary, the framework provided by the MBO systems approach gives the manager a conceptual handle with which he can grasp the complexities of the job of managing. This approach focuses on viewing the organization as a totality while also seeing the parts of the system and their interrelationships.²⁴

Application

Previous sections have identified the history, definition, system, elements, and operation of MBO systems. The rationale of this section is to provide thoughts about the application of MBO.

The where, what, and when to apply an MBO program can best be determined by why it's being adopted. Although a variety of reasons are identified when an organization adopts MBO, they can generally be grouped into four broad categories.

1. The increasing demand for greater accountability
2. The demand for a greater voice by managers
3. The increasing rate of change
4. The increasing degree of complexity

Demand for Accountability

Throughout all types and levels of organizations, there has been a marked increase in the demand for accountability on the part of management. Managers are being required more often to justify

the effectiveness or reasons for their decisions. Supervisors are expected to achieve meaningful, worthwhile goals. Department heads are being required to document the reason for their existence.

An MBO program is ideal for this increasing demand for accountability and the challenge it poses. First, MBO aligns the efforts of all managers to achieve goals that have been agreed upon. This approach encourages an organization to concentrate on important matters rather than getting bogged down with "busy work."

Secondly, MBO provides an organization with concrete means for documenting the progress, success, or contributions it has made.

Demand for Greater Voice

Some organizations in their rush to define and treat the workers' problems are all but overlooking the plight of its supervisors. Although indicators such as turnover, absenteeism, apathy, lack of decision making opportunities, and a lessening opportunity to demonstrate individuality are used to gauge the magnitude of the problem among workers, they are equally appropriate when evaluating the supervisor's situation. Recent studies and cases indicate that there is a potentially dangerous and costly excess of unrest and disenchantment among supervisory personnel. An HEW report, while evaluating managers seeking a mid-career change, documented this development. The report states:

Characteristically, middle managers perceive that they lack influence on organization decision making, yet they must implement company policy--and often without sufficient authority or resources to effectively carry it out.²⁶

Again MBO with its systems approach has the built-in vehicle and latitude for giving the supervisor a major voice in determining both his day-to-day and future actions.

Increasing Rate of Change

As cited in the Introduction, the rate of change in the world, environment, and technology can create vast problems for today's manager. In some industries this rate of change is increasing geometrically. What was new yesterday will be old tomorrow. Given this rate of change, no one person, department, or organization can successfully cope. Unless they employ a system design for this condition. MBO, by providing a system of flexible management, can best deal with the rapidly changing technological requirements of today's organization. The dynamics of the MBO system and the fact that it is designed for continuous monitoring, reviewing, and the performance towards goals helps MBO provide a flexible way of managing change as it occurs within the organization and the environment. The utilization of a system that addresses itself to change is an excellent way of coping with change.²⁷

Increasing Complexity

Although there is a relation between this problem and rate of change, for management analysis they are identified as separate

problems. Basically, this category recognizes the fact that the job of managing has become so complex that "management by the seat of the pants" does not work. Today's supervisors are dealing with technological changes and complexities that demand computer-like decisions and priorities.

Once more, one of the best ways to cope with this type of problem is a management system that not only helps order priorities but also gets all managers involved in helping with the problem.²⁸

Another aspect in understanding the application of MBO is the recognition of what MBO is not intended to be or do. A list of these intentions would be quite lengthy; however, a few are listed below to give their characteristic theme.

MBO is not intended to be: a solution to all management problems; a paper mill of reports or forms; just an objective-setting process; an activity trap; a "bible;" a complex scientific formula; only a personnel evaluation tool; another headache for managers; rigid and non-flexible; an instant success.

In summary, MBO is applicable in a variety of conditions or problems. However, managers must not expect MBO to be a cure-all, but merely a tool available to make their job easier and more effective. Yet, to be effective, a tool must be applied or used only for what it was designed.

CHAPTER II FOOTNOTES

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³"An Uneasy Look at Performance," Harvard Business Review, Vol. 35, No. 3, May-June 1957, pp. 89-94.

⁴Edward C. Schleh, Management by Results, New York: McGraw-Hill Book Company, Inc., 1961, pp. 18-19.

⁵Paul Mali, How to Manage by Objective: A Short Course for Managers, New York: John Wiley and Sons, Inc., 1975, pp. 3-4.

⁶Dale D. McConkey, MBO for Nonprofit Organizations, New York: AMACOM, 1975, pp. 10-11.

⁷George S. Odione, Management by Objective: A System of Managerial Leadership, New York: Pitman, 1965, p. 55.

⁸As paraphrased in Management News, New York: AMACOM, May 1965.

⁹"Developing Executives to Beat the Profit Squeeze," Business Horizons, Winter 1962, p. 49.

¹⁰Statement Before the Subcommittee on Antitrust and Monopoly of the U.S. Senate Committee on the Judiciary, December 2, 1955.

¹¹Mali, op cit., pp. 3-5.

¹²Ibid., p. 5.

¹³Ibid., p. 7.

¹⁴Ibid.

¹⁵Ibid., pp. 7-8.

¹⁶Ibid., p. 8.

¹⁷Ibid.

¹⁸Ibid., pp. 8-9.

¹⁹Ibid., p. 9.

²⁰Dan Voich, Jr. and Daniel A. Wren, Principles of Management, New York: The Ronald Press Company, 1968, p. 21.

²¹Ibid., pp. 24-25.

²²Dale D. McConkey, How to Manage by Results, New York: AMACOM, 1976, p. 21.

²³Ibid., pp. 21-22.

²⁴Wren, op. cit., p. 39.

²⁵McConkey, MBO for Non-Profit Organizations, op. cit., pp. 200-2d.

²⁶Department of Health, Education, and Welfare, Work in America, 1972, p. 36.

²⁷McConkey, MBO for Non-Profit Organizations, op. cit., pp. 200-205.

²⁸Ibid., pp. 200-206.

CHAPTER III

A MBO MODEL

Development

Although the use of management by objective has increased, a proper method of adoption is still a major problem with most companies. Walter Wikstrom of The Conference Board, in a recent research report, identifies a fundamental approach technique. He states:

Some organizations have adopted MBO as a basic management philosophy and have followed the principles wherever they might lead. They led to changes in job assignments and reporting relationships, changes in the ways in which decisions are taken, and in the men who are involved in the decision process, changes in the availability of information throughout the structure, and changes in the spirit of the employee group at all levels. This approach to MBO has proven to be fantastically difficult, time consuming, frustrating, . . . and valuable. The firms that have followed this approach are the ones that claim to see the results in improved performance by individuals, departments, divisions, and the total organizations.¹

In this chapter, I will use the Lowry Technical Training Center (LTTC) as a model to examine the development and organization of a successful MBO program.

LTTC is one of several technical training centers operating in the Air Force's Air Training Command (ATC). As outlined by Air Force Regulation 23-6, the mission and responsibilities of ATC are:

Recruits and selects officers, officer trainees, and airmen for the Air Force as authorized

. . .
b. Provides for:

- (1) Airman basic military training.
- (2) Officer military training (other than the Air Force ROTC program and the Air Force Academy).
- (3) Initial training for direct appointee officers.
- (4) Technical training leading to qualification in Air Force specialties.
- (5) Advanced, lateral, and supplemental training as directed.
- (6) Field training.
- (7) On-the-job training advisory service.

. . .
(17) Any other training which may be directed by the Chief of Staff, HQ USAF.²

ATC, the largest training-education system in the free world, is headquartered at Randolph AFB, Texas. It manages 14 bases in eight states, and 85 field training detachments (FTDs) and operating locations (OLs) throughout the world. In 1977 instructors assigned to ATC conducted nearly 2,600 courses for approximately 152,000 personnel. An additional 700 courses were administered to around 126,000 students by ATCs FTDs and OLs. In summary, ATCs mission, of training, makes it responsible either directly or indirectly for all AF training. Figure 3-1 shows units assigned to ATC.³

Although a training mission is viewed by some as a nonessential job, I believe General Twining, when Chief of Staff USAF, put ATCs mission in its proper perspective. He stated:

Not a single item of our new shiny new machinery of defense is worth two cents without sufficiently trained and experienced men to make it go at the instant we need it. As

AIR TRAINING COMMAND

Headquarters, Randolph AFB, Tex

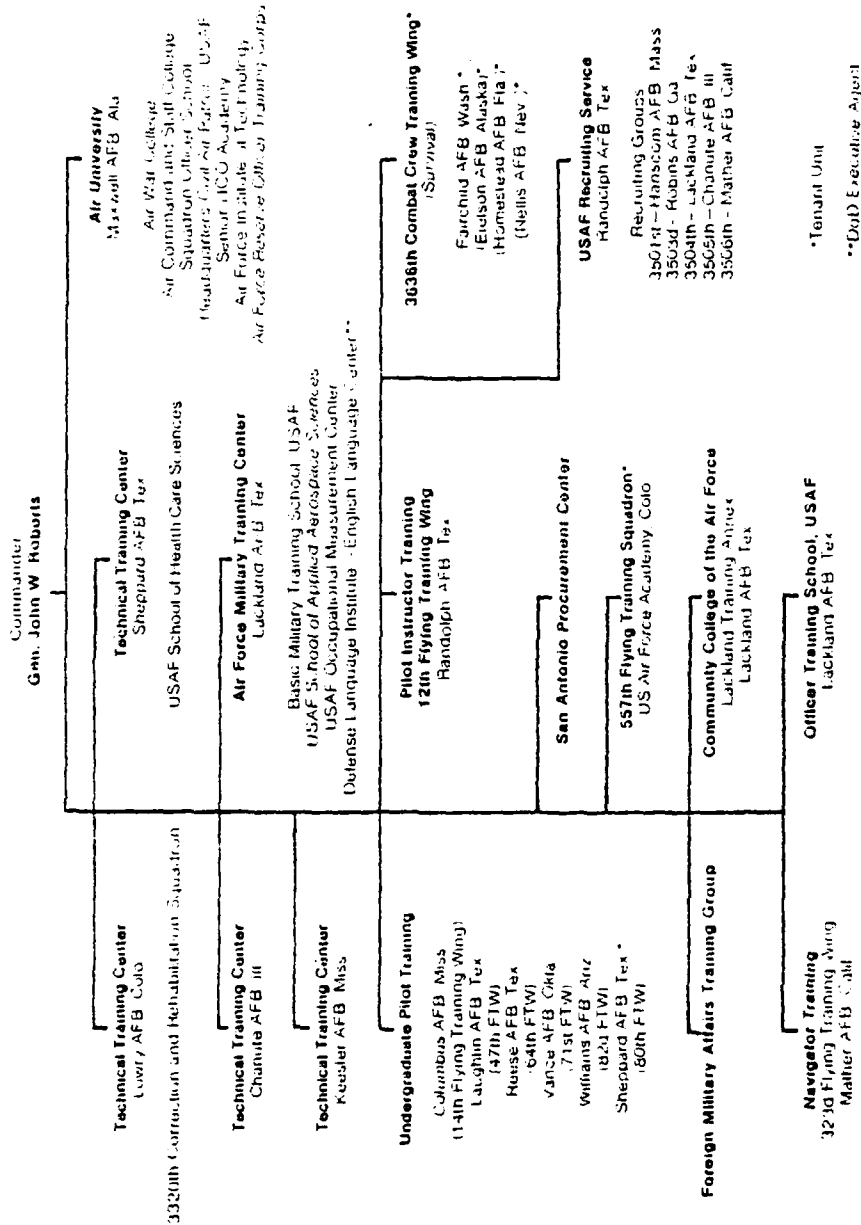


Figure 3-1. Air Training Command

always, throughout human history, behind every product of man's genius stands the individual men who will either use it or fail to use it successfully.

Machines are only an extension of man's powers and those powers must be just as highly developed as the machines. The next time you see or hear a new model jet sweep across the sky, think also of the newly trained man in it and the specially trained men behind it. The man must be the master of the machine. Everything depends on him.⁴

Lowry Technical Training Centers' mission and responsibilities in support of ATC performance of the Air Force training mission is outlined in Air Training Command Regulation (ATCR) 23-26:

2. Mission:

a. Provide individual military and technical training for officers and airmen of the Air Force, Air Force Reserve, Air National Guard, Air Force civilian employees, allied students, and other Department of Defense agencies.

b. Prepare USAF extension and career development courses, specialty training standards, USAF and ATC training manuals, job education training packages, and air base disaster training programs . . .

c. Manage the Armed Forces Air Intelligence Training Center and conduct air intelligence training programs and courses assigned to the Air Force as common to air intelligence training.

d. Manage the Interservice Nuclear Weapons School and conduct joint service nuclear courses in accordance with AFR 50-18.

. . .

i. Complete special assignments directed by the Commander, ATC.

With this mission in mind, LTTC commander and supervisors developed an MBO approach. Although it was recognized early in the programs development that success depended upon the method of introduction, LTTC still made several false starts before arriving

at its present system. In defining its management program, LTTC adopts Odiorne's concept of MBO as a management system whereby the supervisor and subordinate managers of an organization jointly identify its common goals, define each individual's major areas of responsibility in terms of the results expected of him, and use these measures as guides for operating the organization and assessing the contribution of its members.⁶ There are several reasons for LTTC adopting this approach to MBO. First, the "superior-subordinate requirement" suggests total commitment and Lowry's system developers felt a key factor for success was having all supervisors (top to bottom) involved in the program. Second, a "system of management" would help to steer and give the training center direction. Third, the definition requires "jointly identified objectives." This procedure provided the commitment and cooperation the developers felt were needed by a new system. Finally, Odiorne's definition mentions "expected results." This was the most important aspect of the definition. It's not the success or failure of objectives that makes this part critical, but the fact that management can make better evaluations of personnel, equipment, resources, and the mission. Using these evaluations, "sound decisions" can be made.

LTTCs program was introduced with an educational phase. Every supervisor was scheduled for a two-hour training session which introduced the program's definition, philosophy, terminology, and organization.

Based on its MBO definition, the program developed a philosophy of "apparent effectiveness vs. managerial effectiveness." (Figure

3-2) This philosophy provided a contrast between traditional and system management thinking, and was adopted because the developers felt success with MBO would be determined by the manager's developing an MBO mentality. The foundation for this mentality is the ability to distinguish an activity from an objective. During their training sessions, managers were shown how an activity is something minor in nature which is oriented towards accomplishing a specific task. It is usually directed from higher (above) management. While an objective is something you generate yourself, or something you haven't been told to do, it will have a significant impact on your organization and may take six months to two years to accomplish. This concept was clarified in the following analysis.

Do Things Right vs. Do Right Things

The ideal being a manager should be oriented towards doing the right things, not necessarily doing things right. For many times a manager spends all his time worrying about conforming to a vast list of regulations instead of asking the questions: Actually do I even need to do the action required by regulation? Does the regulation apply to my situation or should I get a waiver?

Solve Problems vs. Produce Creative Alternatives

Using an MBO approach, a manager does not identify objectives as day-to-day activities which are devoted to solving problems. Instead, he wants objectives to produce creative alternatives.

<u>Apparent</u>		<u>Managerial</u>
Do Things Right	vs.	Do Right Things
Solve Problems	vs.	Produce Creative Alternatives
Safeguard Resources	vs.	Optimize Resource Use
Discharge Duties	vs.	Obtain Results

Figure 3-2. Apparent vs. Managerial Effectiveness

Safeguard Resources vs. Optimize Resource Use

Safeguarding resources is an activity, i.e., having an accounting system, making sure everyone signs items out. In contrast, the idea of optimizing resources is devoted towards objectives or results not duties or activities.

Discharge Duties vs. Obtain Results

Finally, this ideal is designed to get people to think more about getting the job done rather than time spent at the shop. A person who discharges duties might say, "yes, I spent eight hours at work today" as opposed to the person interested in results saying "don't ask me how long I spent, ask what I did."

The result of this contrast is that LTTC managers approached their MBO program with a better understanding of activities and objectives.

Another aspect in LTTC program development is the concept of an advisor. The ideal of having a "resident wizard" available when introducing a new program is not unique. However, in the LTTC program, they were careful in defining exactly what functions the advisor would perform. Figure 3-3 outlines the advisor's functions. The key factor with this list is that it also suggests "what the advisor is not." First, he is not an overall consultant to sort out organizational problems. Second, he is not a diagnostician. Finally, an advisor is not a substitute for management.

- Trains managers
- Aids top management in defining KRAs
for top unit
- Helps individual managers draft manager's
guides and action plans
- Helps as catalyst during MOS sessions
- Interdepartment coordination
- Establishing and monitoring timetable

Figure 3-3. Functions of Advisor

In summary, the advisor provides information about the MBO process and not quick solutions for any management problem. Managers must be aware that the acquisition of MBO skills does not prevent them from performing their managerial responsibilities or functions.

The last aspect to consider in the development of LTTCs program was the terminology. Since there are various approaches for the MBO concept and each has its own definition and style, a uniform set of terms for the LTTC program was established. Appendix A contains a glossary of the terms used with the Lowry program.

Organization

The organization of LTTCs MBO program is similar to the approach used by Air Force System Command's Contract Maintenance Division program. Basically, the program is organized as a process or system of management whereby the subordinate generates objectives, not the supervisor, and negotiates them with his boss. The process consisting of seven components or steps is an extension of the basic function concept outlined in Chapter 2. Figure 3-4 shows the organization of the system components.

Goal Setting

In Lowry's program, a distinction is made between the terms "goals" and "objectives."

A goal reflects corporate strategy developed from such questions as: What business are we to be in? or What do we want to be? An objective is a highly specific statement about what is to be accomplished in support of a goal. Goals are to be thought of as corporate initiatives, that have

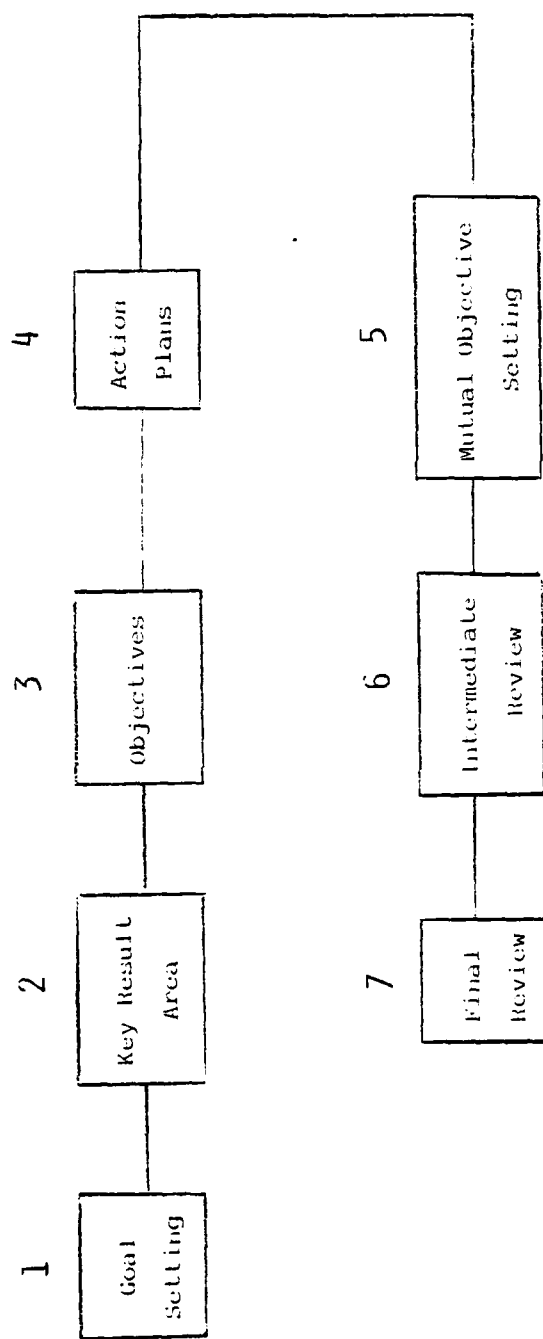


Figure 3-4. Components of MBO

considered resources, priorities, and values, as they steer the organization in the desired direction. Goals are not established for such short range periods of three to six months, but should be tied to a time frame of ten to fourteen months with twelve months being the optimum. Some corporate goals may be established for two, three, or five years if the corporate strategy involves long range planning.⁷

During the goal setting step or phase the Center Commander (chief executive) convenes a goal setting session with his Wing Commander, Air Base Group Commander, Resource Manager Group Commander, and USAF Clinic Commander. These sessions are held at least annually for (1) reviewing the previous year's achievement, and (2) the setting of corporate goals for the next year reflecting the direction to be taken. Executives were prepared, prior to the sessions, by consulting with their subordinate managers and staff. Therefore, at Lowry, it was possible to carefully develop clear and concrete goals, which insured the best goals being established in pursuit of the desired corporate achievements.⁸

A conscious effort was made to prevent goals from becoming simple window dressing and as such providing little or no guidance to lower levels. During the training phase, managers discussed what goals will and will not do for an organization. The following is a list of what the Lowry MBO program does and does not expect of goals.

What you should expect of goals:

- Provide integrative and unifying power--a total corporate view considering where resources can best be concentrated for maximum effectiveness and growth.

- Create communications--not confusion about what is important and why. Much easier for managers down the line to make better quality decisions.

- Compels serious thought about the correct and realistic approach to planning.

What you should not expect of goals:

- An immediate and magically produced definitive answer to corporate dreams of the future.

- Be successful without the interest, support, and dedication of top management.⁹

The following examples of corporate goals and rationale were supplied by LTTC's program advisor. They were developed during the first commander's goal setting sessions.

Goal: Develop cost model that clearly identifies direct and indirect training cost in order to improve management's decision-making processes.

Rationale: The cost data for assessing the economic impact of management alternatives is unavoidable at center level. Consequently, managers are unable to operate or plan in terms of actual hard dollar cost.

Goal: Review and revise organizational structure on a continuing basis to streamline and improve operating efficiency, reduce manpower requirements, and cut operating costs.

Rationale: Our current organizational structure consists of redundant staff layers with similar functions performed at different levels. Responsibilities are shared at different levels causing confusion as to who really has the ball. Few personnel in the organization understand the interaction between organizational elements. The approval authority for specific tasks is often higher than required for the level of responsibility.

Goal: Validate position descriptions to insure they reflect needed tasks.

Rationale: It is the responsibility of the supervisor to review position descriptions annually. This is not being done conscientiously in all cases and changes are seldom incorporated into the PD. To insure that all personnel are doing only what the mission demands and that jobs, military and civilian, are properly classified to reflect the right grade, annual reviews must be done properly with regard for the cost of the government.

Goal: Develop administrative systems to streamline procedures and reduce costs.

Rationale: We need to speed up the flow of paperwork in order to get it into the hands of the person who has to do the work. There is a need to minimize the number of people who handle paperwork. We need to find ways to process information more efficiently and economically by using up-to-date, available administrative systems.

In summary, the goal setting step is an important part of Lowry's MBO process. Therefore, goals should be stated clearly and without ambiguous lead-in words or phrases. The result should be a goal statement which provides direction to the organization thereby allowing subordinate managers to determine how best to fit his unit into the total effort.¹⁰

Key Results Area (KRA)

In Lowry's program, KRAs identify the major areas where a high level of performance is necessary. Although they are developed by the executive committee, they are not to be confused with corporate goals. KRAs as a whole should:

- Be broad, but not cosmic, and not too general.
- Answer the question, "What are the most important areas of responsibility, now and in the future." This identifies why the manager's organization is in existence.
- Change rarely--therefore once established, sustain a long term identity.
- Distinguish between the priority and the routine.¹¹

Each KRA should have the following characteristics. They should:

Be unaccomplishable--This means it will be never ending. So a manager cannot accomplish a KRA in a specific time.

Lead to associated objectives which are accomplishable--Each KRA should produce at least one objective and perhaps more.

Be an important part of the position--This is expected since they were developed to identify those areas that provide a majority of a manager results.

Be within the actual limits of authority and responsibility--Therefore, a KRA should not be developed for an area which a manager has no control.

When developing key result areas, the following guidelines were used in Lowry's program.

1. There should not be so many as to interfere with dealing with the essence of the job or so few as to make planning difficult. As a rule, you will have four to six key results areas.
2. Use few words. Usually from one to four is sufficient.
3. Avoid directional indicators. Therefore, leave out words like increase, reduce, satisfy, or reach.
4. Avoid any quantities or timing, i.e., target dates, costs.
5. Each should refer to an area in which you expect to effectively produce results. It is not ordinarily an area of routine activities alone.¹²

The following are examples of KRAs developed in Lowry's MBO program.

- Technical training
- Student administration
- Resource management
- Curricula

- Faculty
- Facilities

Objectives

At this point in the program we see that corporate goals have been determined and areas where results are desired have been identified. Now begins the most difficult step, formulating the objectives. It involves the greatest amount of personnel and is the basis for all the other steps.

In Lowry's program objectives were defined as specific statements, written by managers, about what was to be accomplished in a particular key result area. As a result of formulating objectives, managers were expected to (1) accept responsibility for completion of objectives and (2) be committed to results which are measurable or recognizable within a stated time span.

Although an objective specifies what a manager must do, he is free to choose any approach for their development. An example of one approach is for a manager to simply examine his normal work output and then evaluate it for possible improvement. These improvements would be the basis for his objective statement. Another approach has a manager identify problems or conditions presently affecting his unit's performance. The objective statements may be written to resolve, reduce, or fulfill the adverse situations.¹³

Basically, objectives may be developed from many approaches. However, to be effective, they must contain certain characteristics.

Therefore, managers were encouraged to test their objective statement and if it didn't measure up, to rewrite it until it did. The following list of characteristics were used for testing objectives.

Specific--The objective should describe only one result to be achieved and in such a manner that there can be no misunderstanding about what is expected.

Measurable--The assumption in MBO is that, if an outcome can't be measured, the degree of achievement will not be known. Results measurement is the key to success in an MBO program. You must know where you've been and when you reach your objective.

Specifies only "what," "when," "who" and "how" in the action plan. Objectives should contain only that information necessary to understand them. Trying to put more information into an objective only makes it less precise.

Understandable--It must be understandable to those directly concerned--the manager, his subordinate, and his supervisors.

Relates directly to a KRA--Each objective must relate to one KRA and only one. If it applies to more than one, the KRAs have not been well defined.

Challenging but realistic--An objective should never describe what is already being achieved; it should motivate the manager to raise his sights to new levels of accomplishments. The status quo is not enough; however, the objective must be realistic. An impossible-to-achieve objective generates frustration rather than

motivation. Learning to develop objectives that are challenging yet achievable is one of the most difficult parts of the MBO system.

Results oriented--MBO focuses on results, not activities. Sometimes, however, there is a fine line between an objective and activity. When an objective consists only of an activity, it is essential that the manager ensures that the activity is being performed for a good reason and not merely for the sake of the activity itself.

Significant--Defining objectives in relatively insignificant areas is time-wasting, blurs the focus on the more important areas and--by unnecessarily diluting the system--reduces the usefulness and value of the MBO system.

Avoids dual responsibility--One person (manager) must be responsible for and capable of achieving an objective. If this is not possible, a task force should be established to complete the objective.¹⁴

To assist managers in writing objectives the following examples and comments were provided.

"To make eight sales calls a day"

Comment: Poor, states an activity, not results.

"To improve airport customer service"

Comment: Poor, not measurable.

"To create a better corporate image by 1977"

Comment: Poor, too vague, not understandable, not measurable.

"To increase revenue by 10% in City X and 14% in City Y by 31 December 1973"

Comment: Poor, specifies two results, not one.

"To increase passenger revenue in City X by 12% during 1977"

Comment: Good, specifies the type of revenue, the measurable percentage of increase, and the time period of accomplishment.

"To attain during 1977 an on-time departure performance of at least 93% of all flights originating or transiting Stapleton"

Comment: Good (is attainable and yet challenging). It is specific, measurable, understandable, presumably timely, and compatible with other objectives.¹⁵

When writing objectives, Lowry's managers used worksheets shown in Figure 3-5.¹⁶

Action Plans

After it has been established what's to be done, the how, where, and who must be outlined. This outline, generally speaking, is an action plan. By definition, "an action plan is the means to accomplish an objective. It identifies the how, who, and what of an objective."¹⁷ However, it should be more than just an ideal in your head of how you're going to proceed. Although no specific

OBJECTIVE(S) WORKSHEET				PAGE	OF	PAGES
JOB TITLE		IMMEDIATE SUPERIOR		REVIEWING METHOD		
JOB NUMBER AND ORGANIZATION		JOB TITLE		FROM	TO	
KEY RESULT AREAS (List major subdivisions of the job)	OBJECTIVES (Describe the results achieved when each key area is being well done under present conditions)	AGREEMENT INITIALS/DATE	ACTION PLAN	REVIEWS REMARKS		
A	B	C	D	E		

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Figure 3-5. Objective Worksheet

format is required for an action plan, it still should be spelled out in some step-by-step form. Examples include but are limited to flow diagrams, charts, milestones, schedules, or a combination of all.

When developing action plans, Lowry's managers considered the following guidelines. Figure 3-6 contains action plan worksheets.¹⁸

- Be logical but brief.
- Each step in the plan should be measurable and accountable
- The "action" in the action plan means that something is going to get done by someone. This is accountability and it is necessary.
- The action plan is an exercise in feasibility of the objective. If the manager cannot come up with means to attain the objective, then it should be withdrawn. This step of thinking, through the action necessary for attainment, reinforces the manager's knowledge of the objective. He is in a better position to defend it, or change certain aspects. Don't lose sight of the fact that the "action plan" is developed shortly after the objective is formulated, before the meetings with the supervisor, so there is time for adjustments.
- Action plans are subject to change and sometimes will change.¹⁹

ACTION PLAN FOR OBJECTIVES				PAGE	OF	PAGES
ALLOCATION	DATE	INITIALS				
SUPERVISOR						
SUBORDINATE						
MANAGER'S NAME	POSITION			FROM	REPORTING PERIOD TO	
KEY RESULT AREA AND OBJECTIVE STATEMENT	ACTION TO BE TAKEN (Step by step breakdown)	INDIVIDUAL(S) CONCERNED	COMMENTS ON ACTION TAKEN			
A	A	C	D			

Figure 3-6. Action Plan Worksheet

In summary, an objective without an action plan is simply an estimate or forecast. If an objective is achieved without an action plan then it was a prediction or fate.

Mutual Objective Setting

The heart or key of Lowry's MBO program is its mutual objective setting (MOS) session. It is defined as the process in which a manager and supervisor not only review the KRAs, objectives, and action plans proposed by the manager but also reach a mutual agreement on their final form. The MOS session is divided into three stages: before meeting, during meeting, and after meeting. During each stage, the manager and supervisor must perform specific responsibilities or roles.

Manager's Role in MOS

Before meeting - The supervisor passed down to the manager a copy of what he has negotiated with his supervisor. From this information the manager completes a guide for his job, writes objectives, and develops action plans. Once completed he sends the supervisor a pre-MOS copy.

During meeting - This face-to-face session is conducted by the subordinate. Although he leads the discussion, he should maintain an open mind. For the best results, this manager-supervisor interaction should be performed on the adult-adult level identified by the transactional analysis (TA) theory.²⁰ According to Dr. Eric Berne, developer of the TA concept, this is one of the most effective types of communication available for mutual problem solving.²¹

After meeting - If required, the manager makes changes in "his" guide, objectives or action plans so that they reflect the ideals negotiated in the previous stage. Then he secures his supervisor's signature on the corrected copies and distributes them as required. In Lowry's program the supervisor, manager, and program advisor received a copy.

Supervisor's Role in MOS

Before meeting - The supervisor should spend this time preparing for the next stage. He should develop ideals of the manager's problem areas and strong points. He may want to develop some possible objectives for the manager. The point being that unless he's informed or prepared for the next stage, he'll do more harm than good. Finally, since this is a vital step in the MBO process, the supervisor should arrange for no interruptions during the MOS meeting.

During meeting - Since the subordinate developed his objectives, the supervisor should allow him to lead the discussion. However, the supervisor must maintain an open mind and keep the dealings on an adult-adult basis. Basically, the supervisor should let his managers carry the ball, he shouldn't try to tell them what to do. Somethings a supervisor should be concerned with are output, degree of difficulty, and assistance a manager may need for his objectives. Finally, a supervisor should remember that he maintains the final approval authority.

After meeting - Once all the terms have been negotiated a supervisor should sign and receive a copy of the final settlement.

The signing not only completes this step but also it signals the mutual acceptance of objectives and their plans. Although the manager is now responsible for completing the objectives, the supervisor is obligated to support his subordinate in this task.

Immediate Review

Another name for this step could be control. However, with MBO control has a different meaning than the usual management concept. With MBO, greater emphasis is put on self-control. Therefore, the individual becomes totally responsible for his performance.

The purpose of the immediate review is to determine whether a manager is making satisfactory progress toward the completion of his objectives. The review accomplishes its goal by acting as a forcing function thereby making a manager think about his objectives throughout the year. Normally, the review is performed as a face-to-face meeting between the supervisor and subordinate. At Lowry, an immediate review is conducted quarterly.

To adequately complete this step, a manager must maintain control systems which flag major deviations and in a timely manner. When functioning properly the manager responsible for the results is the first one to realize his shortcomings.²²

Do's and Don'ts in Conducting Immediate Review

- Review at least quarterly with the option to meet more often if needed. Although it is necessary to keep the supervisor (and the organization) fairly current and appraised of any startling development, too many reviews would be upsetting and disruptive to the subordinate.

- Subordinate should conduct the session. Not only is the manager familiar with the objectives, but also he knows how well he is doing in relation to his previous agreement. The objective should be to make the meeting self evaluating, rather than a judgment session.

- Meeting should create mutual understanding. However, both parties should leave the meeting with a clear understanding of the objective and what steps are to be taken, to adjust the action plan to arrive at objective achievement.²³

Final Review

The last step in Lowry's MBO process is the measuring of results. The purpose of this review is to evaluate the accomplishment of objectives. In Lowry's program it is conducted annually.

The final review is a comparison between the actual results and the stated, desired or expected results identified in the objective. If this analysis indicates the desired end results were achieved then a true contribution to the total corporation organization is recognized. If the desired end results were considerably

exceeded, then either the objective was weak to begin with or the manager's unit far exceeded the expectation of accomplishment. Although results are the goal, if they are not obtained then the final review is used to determine other important aspects. Since it is recognized that plans and actions do not always end as expected, the manager and supervisor should avoid a sense of failure. They should use this step for analyzing "what went wrong," "how could we have done things differently," or "is our management information system (feedback) serving our needs." The analysis may show failure was caused by conditions beyond their control. If so, then this information must be evaluated to the appropriate level of management for resolution. From the analysis it may be possible to identify lessons learned and points to remember that may be applicable in the future. The remaining part of this step should be devoted to planning ahead for the next cycle of objectives.²⁴

Analysis

Earlier sections of this chapter reviewed the development and organization of Lowry's MBO program. This section identifies some problems and achievements associated with the program.

Problems

Starting the program. Originally the program made two false starts. Each attempt failed because there was a general lack of understanding of what was meant by MBO.

Change of personnel. This is a problem which exists in all military units. It requires a continuous training program so

that incoming personnel will fit into the program.

Education. The original two-hour training for all managers wasn't adequate to introduce and maintain the program. It required additional effort for the advisor and some knowledgeable supervisor to firmly establish the program.

Command support. Lowry's MBO program was established and operating prior to ATC, its headquarters, publishing any guidance on MBO programs.

Achievements

Program is working. Success speaks for itself. The condition Lowry overcame to establish a functioning program is an achievement.

Training managers. Every manager was indoctrinated into concepts of MBO within one month.

Goal accomplishment. All items identified as corporate goals will be met by final review closure date.

Manager feedback. Input from managers at all levels indicate the system has improved their management performance by assisting them in dealing with their responsibilities.

Advisor status. The system is operating such that he is only required for briefing new managers.

In conclusion, Lowry's MBO program is a systematic organized approach to managing. Overall I would rate the program as good. Although it began under shaky conditions, it has stabilized to where

it is a viable and effective system. Its seven steps encourage a better means for clear communication. This chapter's presentation of Lowry's program has provided an example of MBO management.

CHAPTER III FOOTNOTES

¹International MBO Conference, British Institute of Management, London, December 1970.

²Department of the Air Force, Air Training Command, Air Force Regulation 23-6, 1974, pp. 1,2.

³"Air Training Command," Air Force Magazine, May 1978, p. 68.

⁴The Military Publishing Company, The Air Officer's Guide, Pennsylvania: Stackpole Books, 1971, pp. 379-380.

⁵Department of the Air Force, Directory and Mission Directives of Air Training Command Organization, Air Training Command Regulation 23-26, 1976, pp. 6-2.

⁶George S. Odiorne, Management by Objective: A System of Managerial Leadership: New York: Pitman, 1965.

⁷Department of the Air Force, Organization and Mission--Field Management by Objectives, Lowry Technical Training Center Pamphlet 23-1, 1977, p. 2-1.

⁸Ibid., p. 3-1.

⁹Ibid., p. 2-2.

¹⁰Ibid.

¹¹Ibid.

¹²Ibid., pp. 2-2, 2-3.

¹³Ibid.

¹⁴Ibid., pp. 2-3, 2-4.

¹⁵Ibid., p. 2-4.

¹⁶ Department of the Air Force, Objective(s) Worksheet, Lowry Technical Training Center Form 25, 1978.

¹⁷ Department of the Air Force, Action Plan Definition, Air Contract Maintenance Division Form 37, Training Aid, 1977.

¹⁸ Department of the Air Force, Action Plan for Objectives, Lowry Technical Training Center Form 24, 1978.

¹⁹ Department of the Air Force, Lowry Technical Training Center Pamphlet 23-1, op. cit., p. 2-5.

²⁰ Thomas A. Harris, I'm OK - You're OK, New York: Avon Books, 1969, pp. 89-23.

²¹ Eric Berne, Games People Play, New York: Ballantine Books, Inc., 1964, pp. 23-48.

²² Department of the Air Force, Lowry Technical Training Center Pamphlet 23-1, op. cit., p. 2-5.

²³ Ibid.

²⁴ Ibid., p. 2-6.

CHAPTER IV

PROPOSED MBO FOR TAC TELECOMMUNICATION

Program Introduction

In this chapter an MBO system is presented for use in Tactical Air Command's (TAC) telecommunication environment. The proposed system is a combination of McConkey's "How to Manage by Result" and Odiorne's "Management by Objective" as adopted by Lowry's Technical Training Center. It is specifically designed to address the Tactical Air Control System environment of TAC.

Mission and Responsibility

Headquarters of Tactical Air Command (TAC) is at Langley AFB, Virginia. Figure 4-1 shows TAC's unit assignments.¹ AFR 23-10 states the mission of TAC and prescribes the responsibilities of its commander (COMTAC). Although COMTAC has a threefold mission, they each involve tactical air operations. AFR 23-10 also provides the following definition of these operations:

A tactical air operation involves the employment of tactical air power, independently or in coordination with other air, ground, or naval forces to:

- a. Gain and maintain air superiority;
- b. Inhibit movement of enemy forces into and within an objective area;
- c. Seek out and destroy enemy forces and their supporting installations; and

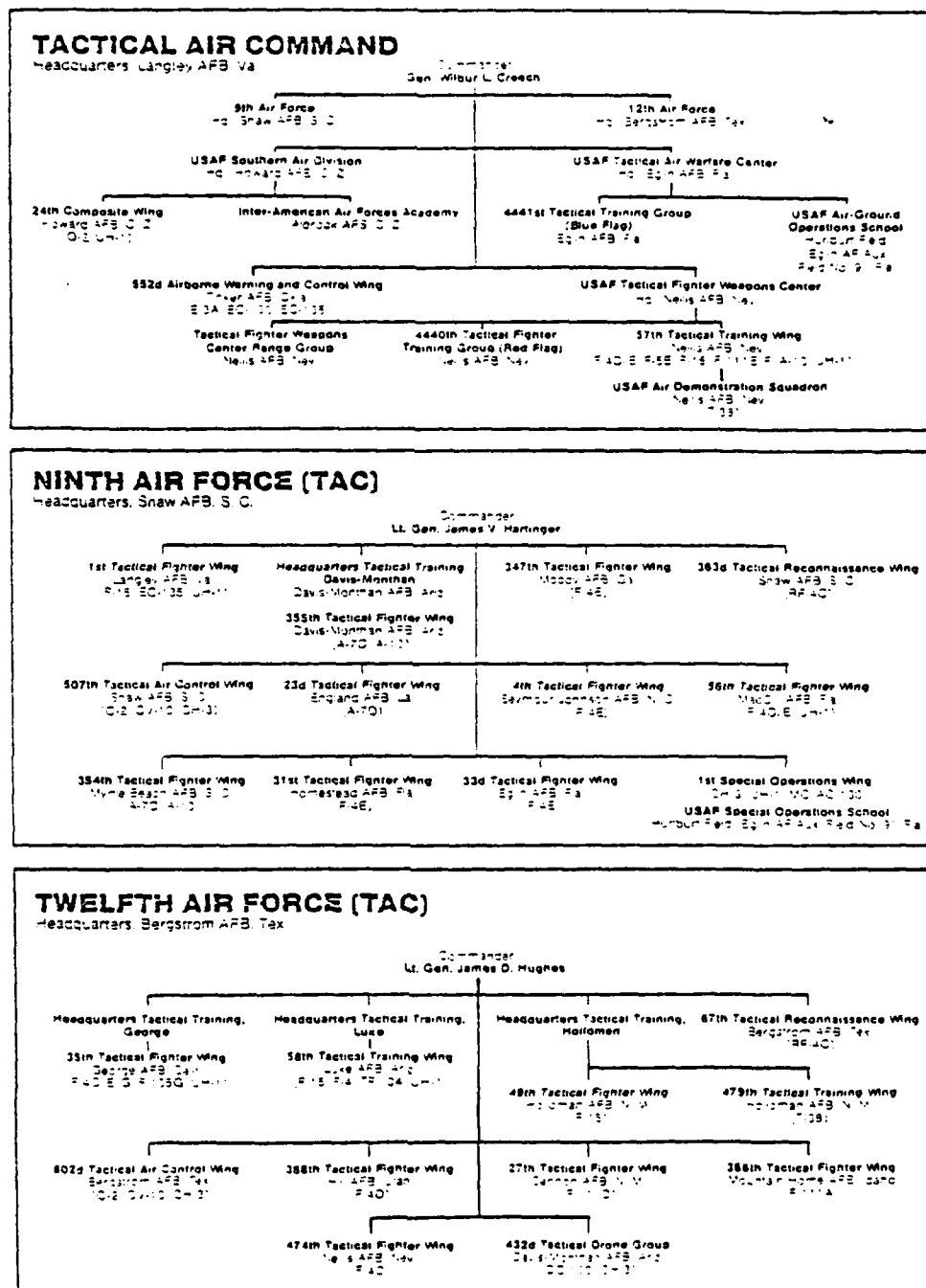


Figure 4-1. Tactical Air Command

d. Directly assist ground or naval forces to achieve their immediate operational objectives within an area.

A tactical air operation may include any or all of the following: tactical fighter/attack/bomber, interceptor, tactical airlift, tactical air reconnaissance, tactical electronic warfare, special operations, and tactical command and control.²

From this mission directive, TAC has a variety of responsibilities. The one which directly affects this program is "Organizes, trains, and equips Tactical Air Control System elements."³

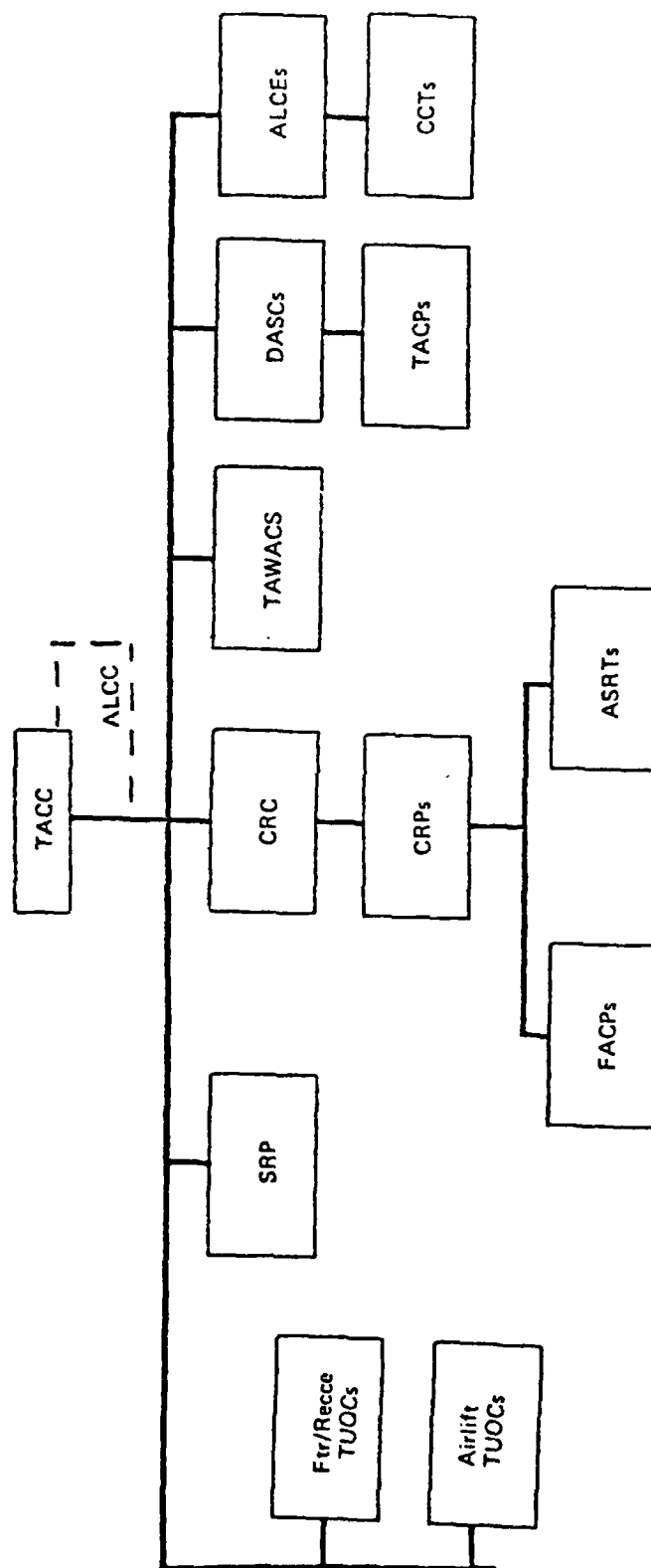
The Tactical Air Control System (TACS) contains the facilities, personnel, sensors, and communications through which the Air Force Component Commander (AFCC) plans, directs, controls, and coordinates available resources to conduct tactical air operations. The TACS operates as an addition to the performance of the basic tactical air combat missions of gaining and maintaining air superiority (counter air), preventing movement of enemy forces into and within the objective area, seeking out and destroying these forces and their supporting installations (interdiction), and joining with ground or naval forces in operations within the objective area in order to assist directly in attainment of their immediate objectives (close air support). For support of the three basic combat missions, there is the task of assault air lift, reconnaissance, air rescue, and air refueling. These missions may be performed in levels of conflict ranging from a show of force to all-out general use. Any or all of the missions may be performed in an operational environment concurrently with elements of the Army, Navy, and Marine Corps.⁴

The equipment used in TACS consists of highly mobile modules which are capable of various support levels, in world-wide tactical operations, during limited war and on contingency missions. TACS equipment is designed not only for world-wide deployment and adverse conditions, but also for both surface and air transportation.

The telecommunication aspect of TACS is observed in its Control and Reporting Center (CRC), Control and Reporting Post (CRP), and Forward Air Control Post (FACP). They provide the radar, processing, display, and communication mission equipment for air surveillance and warning of enemy air activity, navigational assistance and control of tactical combat operations. This includes counter air, interdiction, close air support, reconnaissance, and assault airlift operations at the FACP.⁵

Approach

Implementing MBO in the Tactical Air Control Systems telecommunication environment should be a two-phase process. The major effort of Phase I will be to introduce the program and to educate the managers who will be using the system. These activities will be adopted within the TACS organizational structure of Figure 4-2.⁶ During non-contingency (day-to-day) operations the Tactical Air Control Wing (TACW) commander will be considered the TACS commander or Air Force Component commander. Figure 4-3 shows this chain of command. The program introduction will be performed with an endorsement from the TAC commander and Numbered Air Force commander. These endorsements should clarify the "why," "how," "who," "what," and "when" of the implementation. The education should consist of a



NOTE: When the allocated airlift force becomes too large for efficient direction, an ALCC may be formed to provide airlift force direction.

Figure 4-2. Tactical Air Control System Organizational Chart

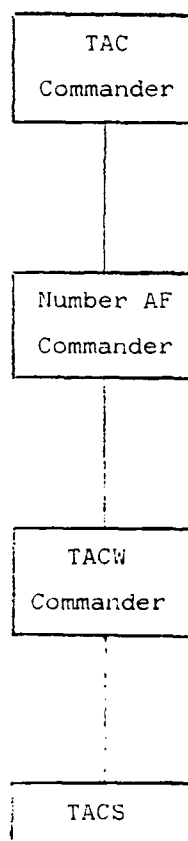


Figure 4-3. Chain of Command

40-hour training session for each manager. It should cover MBO system concepts, planning, objectives, performance, controlling, and evaluation. Appendix B contains a proposed training program. Additional instructor training can be requested from Air Training Command's Air University traveling management team.

The training developed during Phase I will provide the basis for the program's operation in Phase II. Although training will continue in Phase II for all newly assigned managers, knowledgeable managers who have completed Phase I will be expected to operate completely under MBO during Phase II. The operation performed in Phase II will be organized in the following sequential steps:

1. Planning - Establishes goals and desired result areas.
2. Objectives - Setting of objectives.
3. Performance - Write and endorse action plan.
4. Controlling - Manager review and adjust his program.
5. Evaluation - Measure result of system.

Key Personnel

When adopting a new management system such as MBO, all personnel are responsible for the program's success. However, the nature of this proposed MBO system requires certain key personnel to perform specific responsibilities.

<u>Key Personnel</u>	<u>Responsible for:</u>
[1] TAC Commander Number AF Commander	Program introduction; insuring that non-MBO TAC units interfacing with TACS units do not affect the success of program.
[2] TACS Commander	Implementation and success of Phase I and Phase II of the program.
[3] Support Unit Commanders	Providing a link between planning and objective steps.
[4] Managers Throughout TACS	The development and achievement of program objectives.

These responsibilities may be viewed as an additional requirement associated with the proposed MBO program. They are not provided as an exemption for the performance of any Commander's/manager's assigned duties.

Schedule

The initial time schedule may be flexible and vary significantly depending upon the degree of success achieved in completing Phase I. A key factor to remember is that the initial stages should not be rushed. Since the program's introduction may produce a period of significant change in organization procedure, a hurried effort could result in wasting resources or inappropriate goals and it might undermine feelings of the program. However, milestones should

be established for Phase I and II ensuring the program fulfills the implementation and operating requirement.

Planning

The starting point of this proposed MBO system is the planning step. It is composed of two parts: the establishment of corporate goals and key result areas (KRAs). Both of these functions occur at TACSS highest management level. In the first function TACSS commander determines corporate goals for TACS. Next, assisted by his deputy commanders he identifies key result areas. In TACS these deputy commanders are assigned responsibility for what may be a possible KRA. Thus, their expertise will be valuable in identifying these goals and areas.

This step is assumed to occur immediately after the training of TACSS commander and deputy commander. As the training begins for all lower managers, the commander, with the help of his deputies evaluates the basic purpose and current status of TACS. The stated mission should be examined and data collected to analyze current operations and the resources available. Although this is essentially a research effort to define functional areas in which corporate goals can be determined, it will also help to introduce the program. If a goal is to provide a clear intention, it should be based upon the best possible estimate of TACS capabilities. Therefore, initial visits are made at each of the subordinate units. During these visits, the commander reviews or identifies the need and status of each unit. He may, also, take this time to note down any particular problem areas that may affect program success.

Other visits should be made with Numbered Air Force headquarters. Here the TACS commander seeks to determine the status of his organization at that level. He also attempts to identify the mission and goals of his commander and the TACS contribution to these goals.

Once TACS commander has assimilated his background information, he is ready to develop meaningful and measurable corporate goals. The goals should provide leadership a sense of direction. By setting the tone of the united effort, they will determine a large part in the success of Phase II.

Corporate goals may be determined in a variety of ways. However, the best approach for this system is for the TACS commander and his deputies to formulate the common corporate plan for the proposed system. This would allow them to identify TACS corporate goals for a given period of time. In this system goals should be written for a ten to fourteen month time period with an optimum time of twelve months.

Examples of corporate goals for TACS

Goal: Validate radar/communication networks to insure they reflect needed requirement.

Goal: Develop cost models that clearly identify direct and indirect ground radar-to-aircraft training cost in order to improve management's decision-making process.

Goal: Evaluate deployment program to insure it meets readiness requirement.

The setting of goals will be a real test of TACS top management abilities.

Should this group be indecisive, flounder confused, or set inadequate or erroneous objectives, its errors will be compounded as the whole organization focuses on activities aimed at goals that were wrong in the first place.⁷

The second part of the planning step is the identification of key result areas (KRA). Basically, these are areas where the commander must achieve results to be most successful. Their main purpose in the proposed system is to help the commander direct his resources to the most important matters. They also help steer lower management levels by identifying critical areas. KRAs written by the commander and his deputies do not identify everything he is responsible for but only the areas that will provide the majority of his important results. When written, they identify subject matter, not goals or objectives. As a rule, KRAs only need to be defined once. Usually they do not change with time unless the responsibilities of the organization change. The following are examples of KRAs for TACS commander.

- Equipment Maintenance
- Budget
- Operation
- Community Relations
- Mobility

Once a final list of TACS goals and KRAs have been established, the commander and deputy commanders conduct an analysis to establish priorities and reallocate resources as necessary. Using the team

approach throughout the program's development insures that all managers recognize the necessity for coordinated action and understands that each individual is expected to become a primary contributor to this process. The commander selects the final list of objectives and their relative priorities. With the list he sets a review session with his higher headquarters superior. The list of TACS goals is matched with those of higher headquarters to determine their relevance. Although addition or deletion may be made by higher command, the result should be a list that TACS commander and his superior mutually agree upon. Finally, the mutually agreed upon list is passed to the deputy commanders, the next level of management below the TACS commander, thus completing the planning step.

Objective Setting

The second step in this proposed MBO system is objective setting. Objectives may be defined as events or accomplishments which are planned and expected to happen. They can be thought of as jobs or organization results to be completed. Organizations have used various approaches for setting objectives. The three following approaches have been tried or recommended to one degree or another.

[a] Company A determines its overall corporate goals and passes them down the line to be used by the lower levels as they set their objectives (top down).

[b] Company B, using the opposite approach, starts at the lower levels and then builds up to reach the overall corporate objectives (bottom up).

[c] Company C establishes all objectives at practically the same time. This is performed with numerous meetings attended by several levels of management (all at once).

Each of these methods used separately has serious defects. The top down approach discourages the proper feedback and communication required from lower levels in an MBO approach. The bottom up approach does not give any guidance as to what is expected of a lower level manager. This approach also emphasizes present versus future consideration which leads to status quo objectives. Although the last approach generates maximum participation, it also creates maximum confusion and chaos. Therefore, the objective setting method recommended in this proposed system is a combination approach--one that minimizes the disadvantages of the above approaches yet capitalizes on their advantages.⁸

The first step of this program, planning, could be viewed as higher level objective setting. Once the corporate objectives have been set, deputy commander returns to their organizational elements and thus begins the actual objective setting step.

Setting objectives in this manner is known as the link-pin concept. Figure 4-4 illustrates the concept as it might appear for four levels of management.⁹ Because the lowest level supervisors do not have other managers reporting to them, they are shown in Figure 4-4 without a team. However, lack of a formal team does not prevent them from securing as many recommendations and as much commitment from their people as is practical and possible. To prevent this

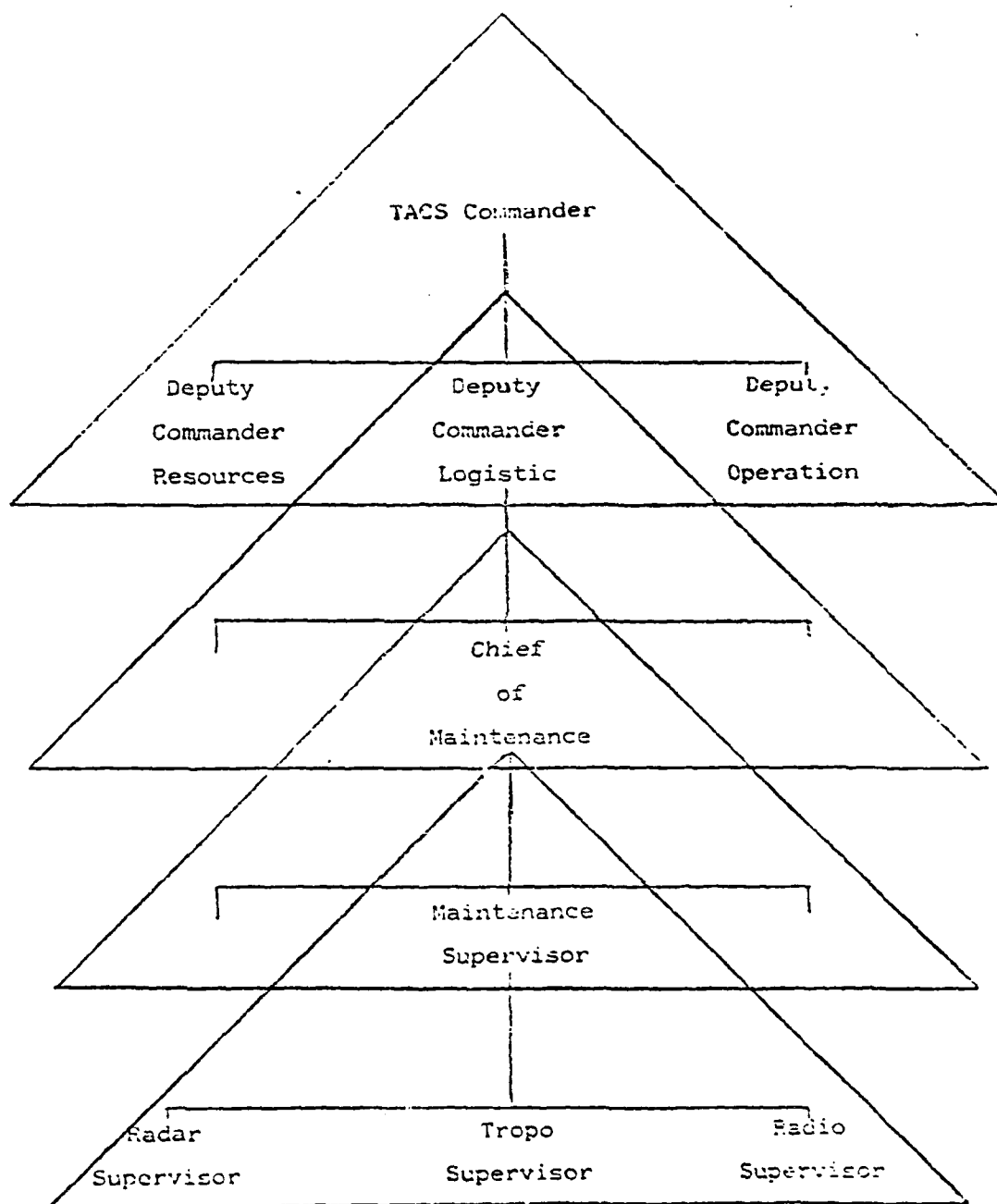


Figure 4-4. Link-Pin Approach

approach from degenerating into the top down method, each team member should be encouraged to be prepared and to provide an active voice in recommending and debating higher level objectives.¹⁰

Determining objectives, to some, is a difficult and trying process. Since MBO is a technique which stresses future commitment for an organization, then a knowledge of past and present conditions may be desirable in providing a perspective for determining objectives. The concept of forecasting was briefly mentioned as two simple methods of determining objectives in Chapter III. Therefore, a manager using this proposed system may use his own techniques, those in Chapter III, or the more complex method listed in Appendix C.¹¹ (Three non-numerical; consensus, problem areas, and maximize opportunity methods are discussed. Five numerical; graphical, extrapolation, semi-average, moving averages, trend of least squares and exponential smoothing methods are also provided with numerical examples.)

When writing objectives there are two key factors a manager should keep in mind. First objectives state the results to be achieved and second he will be responsible for objective attainment. The following characteristics identified in Lowry's program (Chapter III) are also used in this system. A good objective should be:

- specific
- measurable
- specifies only what
- understandable
- relates directly to a KRA

- challenging
- results oriented
- significant
- avoid dual responsibility

The structure of a good objective should be of the following form:

TO (action verb) (single result) BY (target date), (priority).

Therefore you are "To do something by a certain date, and with a desired priority." The priorities for this system are as follows:

<u>Priority Number</u>	<u>Description</u>
1	Objectives that must be obtained. If not, it will significantly impact on mission support.
2	Objectives that should be obtained. If not, it will not adversely affect the organization.
3	Objectives that could be obtained. Otherwise, it will not affect the unit.

By stating an objective in terms of final measurable results you tend to get better understanding and better directions.¹²

Although each manager has received training and practice in writing objectives in Phase I, this step will be the first objective writing session at their work section. Therefore, the following list is provided as typical problems encountered when writing objectives:

- Represents an activity, not an objective.
- More than one action included in the objective.
- It is already being accomplished.
- Too short a duration.
- It is of a routine nature.
- Outside control of the manager.
- Not clearly stated.
- Not measurable.

To assist managers in performing this objective setting step an objectives worksheet will be provided. Figure 4-5 shows a completed sample manager's worksheet.¹³ Once a manager has completed his objectives statements, he should review the following key questions for their evaluation.

1. Is the objective statement constructed properly? TO (action verb) (single key result) BY (target date) (priority).
2. Is it measurable and verifiable?
3. Does it relate directly to the manager's KRA and to higher level objectives?
4. Can it readily be understood by those who must implement it?
5. Is the objective a realistic and attainable one that still represents a significant challenge to the manager and his organization?
6. Will the result, when achieved, justify the expenditure of time and resources required to achieve it?

JOB HOLDER AND ORGANIZATION		OBJECTIVE(S) WORKSHEET		PAGE 1 OF 2 PAGES	
JOB TITLE		IMMEDIATE SUPERVISOR		REPORTING PERIOD	
73TCF		Capt. A. Supervisor		FROM 21 Nov 78 TO 20 Nov 79	
KEY RESULT AREAS (List main subdivisions of the job)	Vehicle Maintenance Supervisor	OBJECTIVES (Describe results achieved when each key area is being well done under present conditions)	AGREEMENT INITIALS/DATE	ACTION PLAN	RATIONALE
A		B	C	D	E
Maintenance		(1) During this period, to acquire all materials necessary for the winterization of required vehicles (pri. 1).	<p>4 Oct 78</p> <p>16 Oct 78</p>	Attached [1] A-G	TAC Hq. has designated a selected number of vehicles in each TACB unit for winterization. This will give them a worldwide deployment capability. To perform this task each unit must order and install winterization kits.

JOB HOLDER AND ORGANIZATION		OBJECTIVE(S) WORKSHEET		PAGE 1 OF 2 PAGES	
JOB TITLE		IMMEDIATE SUPERVISOR		REPORTING PERIOD	
73TCF		Capt. A. Supervisor		FROM 21 Nov 78 TO 20 Nov 79	
KEY RESULT AREAS (List main subdivisions of the job)	Radar Supervisor	OBJECTIVES (Describe results achieved when each key area is being well done under present conditions)	AGREEMENT INITIALS/DATE	ACTION PLAN	RATIONALE
A		B	C	D	E
Maintenance		(1) During this reporting period, to increase by 60% the qualified technicians assigned this section (pri. 1)	<p>21 Oct 78</p> <p>23 Oct 78</p>	Attached [1] A-1	It is the section supervisor responsibility to maintain a minimum level of 4 qualified personnel. Presently there are four qualified assigned and eight unqualified. To insure against unforeseen changes, additional qualified personnel should be made available.

Figure 4-5. Sample Worksheet

7. Can the accountability for final results be clearly established?

In summary, the objective setting process, including the corporate goal session, can be viewed as an objectives triangle (see Figure 4-6).¹⁴ At the apex of the triangle are the broad goals (objectives) of TACS as a whole. Next, the triangle begins to widen out as each succeeding level of management establishes its objectives. The objectives of managers at the top of the triangle in Figure 4-6 are consolidations of objectives of all managers below them. There is a difference between consolidation and compilation. In consolidation, only selected portions of lower level objectives are transmitted up the line. While in compilation all the objectives of the lower level would move up to the next level. Compilation results not only in a papermill but also higher-level managers receive excess information and details it does not need or want.¹⁵ Therefore, in uniting organizational objectives, it is preferable to concentrate on ensuring that the objectives at each level are directly supportive of or beneficial to achieving the next higher level of objectives.

Performance

Given a stated objective, the performance step of this MBO program involves four basic functions.¹⁶ A manager must:

- identify alternative means of completing the objectives,
- weight the alternatives and select the better one(s),
- program for the better alternative(s),
- review program with supervisor.

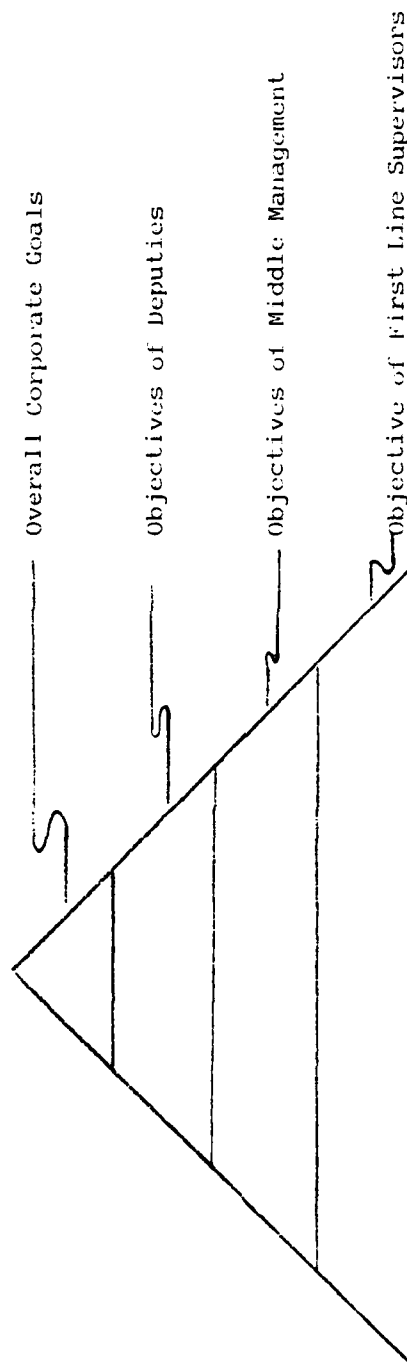


Figure 4-6. Objective Triangle.

Identify Alternatives

The main concern of this function is to identify all alternatives that are possible. The greater the number of alternatives identified, the better a manager's opportunity for completing this step and achieving his objectives. Thus, a TACS manager who recognizes the value of this multiple inputs will actively seek the ideas and recommendations of his subordinates.

Weight and Select Alternatives

Since it is not possible to pursue all the alternatives, a manager's primary concern now is the evaluation of each alternative and selection of the one(s) that will lead more efficiently and effectively to achieving the objective. This function is designed for TACSs flexible and priority environment. Therefore, a manager weighing the alternatives, should consider such factors as equipment, people required, time required, money, and other pertinent factors that may influence the outcome of the alternative.

Programming the Alternative(s)

Once an alternative has been chosen, then a manager must program out a step-by-step plan. This action plan should be as detailed as each manager requires for his performance. For some objectives it may be possible to have more than one alternative.

Review the Program

A key aspect of this function is realism. Therefore, both the manager, who recommends the objective, and his supervisor must review and approve them. During this review session, the following points should be considered:

- Is it reasonable to expect the program as written will achieve the objective?
- Have all possible alternatives been identified and evaluated?
- Have the action plans been expressed in a manner that permits measuring progress in accordance with the timetable?
- Is the program clearly understandable by others who will be involved in carrying them out?

Worksheets shown in Figure 4-7¹⁷ may be used in completing this step. Once a manager has a signed worksheet then he performs his action plan to achieve his objective.

Controlling

The next step in the proposed MBO system is the controlling of a manager's program. There are four ways in which a manager may keep his objective and action plan updated and realistic at all times. The methods are control of assumptions, objectives, action plans, and resources.¹⁸

AGREEMENT		DATE	COORD	
SUPERVISOR	SUPERVISOR	DATE	Office Symbol	Initials
Cap. A. Supervisor	Cap. A. Supervisor	15 Oct 78		
SUBORDINATE	SUBORDINATE			
Eng. B. T. Antenna	Eng. B. T. Antenna	15 Oct 78		
MANAGER'S NAME	MANAGER'S NAME	POSITION	REPORTING PERIOD	
Eng. B. T. Antenna	Eng. B. T. Antenna	Radio Supervisor	21 Nov 78	20 Nov 79
KEY RESULT AREA AND OBJECTIVE STATEMENT		ACTION TO BE TAKEN (Step by step breakdown)	INDIVIDUAL(S) CONCERNED	COMMENTS ON ACTION TAKEN
A		B	C	D
Maintenance (1) Training		A. Review training records of all assigned radar personnel. B. Identify shortages for each person. C. Outline scheduled training required. D. Schedule required training. E. Review progress at end of each month. F. List after 15. G. List after 30. H. List after 45. I. List after 60.	Manager Manager Manager Manager Manager Manager Manager	(1) May have to find some personnel to formalize.
AGREEMENT		DATE	COORD	
SUPERVISOR	SUPERVISOR	DATE	Office Symbol	Initials
Cap. A. Supervisor	Cap. A. Supervisor	17 Oct 78		
SUBORDINATE	SUBORDINATE			
Cap. G. R. Engine	Cap. G. R. Engine	17 Oct 78		
MANAGER'S NAME	MANAGER'S NAME	POSITION	REPORTING PERIOD	
Cap. G. R. Engine	Cap. G. R. Engine	White Ice Maintenance Supervisor	21 Nov 78	20 Nov 79
KEY RESULT AREA AND OBJECTIVE STATEMENT		ACTION TO BE TAKEN (Step by step breakdown)	INDIVIDUAL(S) CONCERNED	COMMENTS ON ACTION TAKEN
A		B	C	D
Maintenance (1) Windmill location		A. Research for requested helix. B. Write supply orders. C. Develop budget request. D. Submit request to supervisor. E. Check monthly supply discount list and if not authorized for 90 days with no change, submit supply letter of difficulty (LOD). F. Evaluate result of above action after 6 months to determine if another LOD should be submitted.	Manager Manager Manager Supervisor Manager Manager Manager	(1) If discount date given develop objective and action plan for installing helix.

Figure 4-7. Worksheet for Action Plans

Control of Assumptions

If properly used this method will provide a manager with an early warning of problems. During the objectives setting step, it was not possible to establish objectives without basing them on major assumptions. These assumptions, which are stated and recorded within the objective and action plan, should be tracked continuously during the target period to determine if they are valid. When performing the action plan and incoming information indicates assumptions are not acting as expected, then a manager must formulate new assumptions and more importantly, a new objective or action plan. Therefore, any time an assumption proves to be wrong, either the objective or plan should be revised. It should be noted that during the controlling steps the assumptions can act as an early warning system only if they've been clearly stated and are constantly monitored.

Control of Objectives

A well written objective statement must be measurable to the maximum extent possible. Therefore, this method requires a manager to maintain control of his objectives with measurable and meaningful feedback tailored to his needs.

Control of Action Plan

This method of control is provided in the step-by-step action plan the manager has developed for achieving his objective. So the plan should be broken down into several distinct steps with an agreed timetable for completing each step. This will permit

the manager to perform interim measures, correcting and revising as necessary during the target period.

Control of Resources

In this last method the budget is defined as the allocation of resources to objectives. It implies the budget is tailored to the objectives and action plan. Therefore, the manager who has responsibility for these activities should receive budget status and variance reports. These can be used to adjust or revise objectives and action plans as required.

In summary, these methods help the manager stay on target or, when necessary, permit the revision of assumptions, objectives, action plans, or budgets so that they are realistic and being followed. However, the TACS manager shouldn't take revision lightly, especially downward from previously established levels. Before such an adjustment is attempted a manager should consider keeping the objective at the same level and explore every possible alternative for correcting whatever undesirable variance may have accrued.

Evaluation

In this proposed MBO system, the purpose of this step is to evaluate the objective accomplishment. The process consists of an interim review quarterly and a final review annually, both attended by a manager and his supervisor. The main thrust of an MBO approach is to provide the manager with an aid for increasing his effectiveness

and thereby optimizing his results. Arch Patten captured the essence of this theme when he said:

When we talk about "appraising the manager's performance," we are really discussing the management of the enterprise, setting corporate objectives, allocating responsibility for their accomplishment, assessing relative individual attainment of these goals and rewarding or penalizing executives in these terms . . . for people and their efforts make the difference between outstanding and poor corporate performance around the world.¹⁹

The interim review contributes to increased managerial efficiency. During the review sessions the following points should be considered.

- [1] Compare progress against objectives,
- [2] Is manager's feedback system effective and timely,
- [3] Analyze the remainder of the target period,
- [4] Adjust objectives and plans and resources as necessary
- [5] Does manager have sufficient authority for objective accomplishment
- [6] Discuss supervisor's support/non-support of objectives.

The final review session increases the managers effectiveness. It should cover:

- [1] Deadlines - were objectives met on time or not.
- [2] Relative importance of objectives - its priority and effect on organization.
- [3] Means of reaching objective - evaluate the method used to accomplish objective.
- [4] Cause of lack of performance - determine possible cause for future planning.

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MANAGEMENT BY OBJECTIVE IN THE AIR FORCE TACTICAL AIR COMMAND T-ETC(U)
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[5] Future plans - using evaluation results how can future objectives be obtained.

The evaluation step of this proposed management system for TACS should also be used to stimulate, motivate, and encourage improved performance. The interim review assisted progress toward the desired results while the annual review gave feedback about results achieved. Yet, in both sessions, there should be a meaningful exchange between supervisors and subordinates.²¹

Problems, Pitfalls, and Disadvantages

There are many problems involved with the installation of any new system; however, there are some problems unique to the MBO process. The following is a list of MBO pitfalls that result when adopting or implementing a program:²²

<u>Pitfall</u>	<u>Symptom</u>
[1] Consider MBO a panacea	Competent management takes a vacation assuming MBO will do it all.
[2] Tell 'em their objective	Instead of trusting his subordinates, a supervisor develops meaningful objectives for them.
[3] Leave out staff managers	Include only line managers in MBO system.
[4] Delegate executive direction	Chief executive gives another top-level executive responsibility for directing the system.

<u>Pitfall</u>	<u>Symptom</u>
[5] Create a papermill	Insisting that everything be reduced to writing and that several copies of each document be prepared.
[6] Ignore feedback	Inadequate or no feedback information.
[7] Emphasize the techniques	Insist that all managers become highly skilled in the techniques and methods of MBO.
[8] Implement overnight	Install program as fast as possible with no training or orientation.
[9] Fail to reward	Give managers only minimal amounts of reward while expecting them to consistently turn in superior results.
[10] Have objectives but no plans	Have managers spend time formulating highly acceptable and needed objectives but don't require them to formulate realistic plans to accomplish objectives.
[11] Stick with your original system	Refuse to be swayed by experience of those who suggest change from original plan.
[12] Be impatient	Wants instant results.

<u>Pitfall</u>	<u>Symptom</u>
[13] Quantify everything	Demand that the results of each objective be stated in absolute dollar figures so that they can be measured with 100% accuracy at the end of the target period.
[14] Stress the objectives, not the system	Have managers writing objectives after a brief explanation of certain qualities of an objective.
[15] Dramatize short term objective	Stress the present and let future take care of itself.
[16] Omit periodic review	No detection of varying performance.
[17] Omit refresher training	New managers are trained by hit-or-miss tutoring of system by older managers.
[18] Don't blend objectives	Fail to coordinate all objectives
[19] Be gutless	Supervisor not expressing his objectives in specific terms, failing to establish priorities, reluctant to replace incompetent manager.
[20] Refuse to delegate	No successive accountability for results.

Appendix D²³ and Appendix E²⁴ contain additional MBO problems and remedies. Although it is impossible to avoid all pitfalls, a manager still should not become discouraged and fearful of trying this proposed system.

Benefits of MBO

Management by Objective can become the TACS most important tool in helping to improve their management performance. It would function as the process connecting a dynamic technical environment that demands results with such factors as priorities, budget restraints, and human contrariness. As such a system, MBO will improve management. Other benefits of MBO are:

- MBO provides greater flexibility
- MBO creates a greater commitment to the organization
- MBO improves the cost/benefit ratio
- MBO develops better and more useful planning
- MBO improves productivity
- MBO increases self-control of individual
- MBO becomes a way-of-life, not a once-a-year gimmick.²⁵

Further benefits of MBO were identified in a study conducted by Carroll and Tosi.²⁶

- The MBO system increases profits by orienting employees to get results.
- It brings clarity and precision to jobs, programs, and planning.
- It heightens motivation to make performance stretches.
- It brings organizational clarity through elimination of misfits and redundancy.

- It promotes coordination through interlocking and alignment.
- It makes compensation allocations easier by evaluating employees in terms of the results they achieve.
- It encourages management development through performance, stretches and objective performance evaluation.
- It improves supervisor-subordinate communication.
- It provides definition and clarification of problem areas.
- It builds confidence in commitment.

In summary, different organizations may have a variety of reasons for adopting a system of MBO. However, the greatest benefit or reason for TACS is that MBO provides a disciplined system for implementing effective management techniques in a changing environment where results are demanded.

CHAPTER IV FOOTNOTES

¹"Tactical Air Command," Air Force Magazine, May 1978, p. 83.

²Department of the Air Force, Tactical Air Command, Air Force Regulation 23-10, 1972, p. 1.

³Ibid., p. 3.

⁴Department of the Air Force, Air Force Component Headquarters and Tactical Air Control Center Operations, Tactical Air Command Regulation 55-45, 1975, pp. 1-1, 2-2.

⁵Department of the Air Force, Tactical Air Control System (TACS): Surveillance and Control of Tactical Air Operation, Tactical Air Command Regulation 55-44, 1975, pp. 1-8.

⁶Department of the Air Force, Tactical Air Force Operations--Tactical Air Control System (TACS), Air Force Manual 2-7, 1973, pp. 1-3.

⁷Dale D. McConkey, How to Manage by Results, Rev. ed., New York: AMACOM, 1976, p. 36.

⁸Ibid., pp. 40-42.

⁹Ibid., pp. 44.

¹⁰Ibid., pp. 41-47.

¹¹Paul Mail, How to Manage by Objective: A Short Course for Managers, New York: John Wiley and Sons, Inc., 1975, pp. 64-85.

¹²Edward C. Schleh, Management by Results: The Dynamics of Profitable Management, New York: McGraw-Hill Book Company, Inc., 1961, p. 20.

¹³Department of the Air Force, Objective(s) Worksheet, Lowry Technical Training Center Form 25, 1978.

- ¹⁴McConkey, op. cit., p. 48.
- ¹⁵Ibid., pp. 123-126.
- ¹⁶Ibid., pp. 90-93.
- ¹⁷Department of the Air Force, Action Plan for Objectives, Lowry Technical Training Center Form 24, 1978.
- ¹⁸McConkey, op. cit., pp. 114-118.
- ¹⁹"Does Performance Appraisal Work?," Business Horizon, February 1973, pp. 83-91.
- ²⁰McConkey, op. cit., pp. 150-151.
- ²¹Mali, op. cit., p. 204.
- ²²McConkey, op. cit., pp. 168-177.
- ²³Mali, op. cit., pp. 209-215.
- ²⁴Glenn H. Varney, Management by Objective, Illinois: The Dartnell Corporation, 1971, p. 165-167.
- ²⁵Frank Greenwood and Nicolai, "MBO: Your Biggest Help," second draft, 1972.
- ²⁶Henry L. Tosi and Stephen J. Carroll, "Managerial Reaction to Management by Objective," Journal of the Academy of Management, Vol. 11, No. 4, December 1968, p. 45.

CHAPTER V

CONCLUSIONS

From the research it is evident that the process of MBO as a management practice has been successfully applied in many organizations including Air Force units. Although there are inherent problems in restructuring an organization, setting quantifiable goals and conducting time consuming training and review periods, all the cases examined claimed overall program success. Most of what was observed or researched has been of a procedural and systems nature relative to installing and making a management-by-objective system operational. There is relatively little technology involved and whether it succeeds or fails depends to a large extent upon the abilities and perseverance of the manager. MBO as one method of management, then, appears to have a universal application.

MBO Can Be Adopted in TACS

Although MBO has been used with claimed, varying degrees of success in different units, it is designed for successful use in TACS telecommunication environment. It was noted that you will succeed with MBO if you're more rational and scientific in the way in which you approach your job. As a matter of fact, the engineering-type manager will have greater success in making MBO work than the non-engineering or non-technical manager. The reason for this is that the technical manager is disciplined in his early educational

background to follow certain steps as he explores the technical aspects of his work. Therefore, it is possible for him to transfer this same skill and discipline to his management.

For success in MBO, it is also very important that a TACS manager grasp the ideal that the system is not a fixed set of procedures, a fixed set of practices or standard approaches, but instead is a flexible, changing, action-oriented way of looking at the job. This implies that managers are going to build into the approach the entire notion that they are going to change in the future, and that in fact what they are doing is analyzing things in terms of how they can constantly strive to improve. This, indeed, will attest to what TACS telecommunications is all about.

Recommendations

MBO should not be expected to solve all of TACS problems. With careful implementation, however, its use can significantly improve management throughout the telecommunication environment. Therefore, TAC's commander should consider the use of MBO as a management technique to complement the many other tools available and in current use. The program should be implemented initially in TACS with later adoption by all TAC units. The approach presented in this research is one of many variations that could be applied.

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APPENDIX

Appendix A. Lowry Glossary

GLOSSARY OF TERMS

- Activity: A thing a person actually does or intends to do, usually an input rather than an output.
- Output: The end results.
- Priority: The relative importance of an objective and/or plan to determine which should be attempted first.
- The Measure: The way in which accomplishment or degree of attainment of the objective will be determined.
- Stretch: That feature of an Objective that causes striving for performance above average.
- Key Result Areas: Those critical areas of the job or unit where specific results must be obtained to fulfill output requirements of the position or unit.
- Mission: The purpose or reason for the organization's existence.
- Goal: Not synonymous with the term Objective. Is usually stated in general terms, broader statement of intent, without the requirement for measurability that characterize an Objective.
- Objective: The specific end result or condition expected within a given time.
- Plan: The steps or planned activities which will result in achieving the Objective.
- Feedback: Information gathered from a variety of sources required by management in determining if desired progress is being achieved.
- Manager: A person occupying a position in an organization, who is responsible for the work of at least one other person and has authority over that person.
- Overlap: When two positions are responsible for the same things.
- Subordinate: A person over whom a superior/manager has authority and for whose work he is responsible.
- Superior: A person having authority over another person, and who is responsible for that person's work.
- Task: A major job necessary to meet an objective.
- Action Item: A major individual step required to achieve a task (consumes resources).
- Event: A specific definable occurrence or happening recognizable at a particular time (start-end). A collection of events make up action items or tasks.
- Quantitative: Measurement by quantity.
- Knowledge Worker: Nonmanager, probably in a staff position and has no power other than that assumed through project association.

APPENDIX B

MBO TRAINING PROGRAM

First Day

1. Program Introduction
 - a. TACS mission
 - b. MBO system concept
 - c. Concept of getting results
 - d. Traditional methods of management compared
2. Planning
 - a. Barriers to getting results
 - b. Corporate goals (TACS)
 - c. Key result areas (KRA)

Second Day

1. Determining Objectives
 - a. Defining objectives
 - b. Trends, errors, forecasting, method
2. Objective Setting Process
 - a. Establishing and writing objectives
 - b. Weighting and interconnecting objectives
3. Workshop:

Participant will write statement of objectives for their respective sections. Critiques and analyses will be done by participant to improve their skill of objective setting.

Third Day

1. Programming
 - a. Work breakdown structure
 - b. Organizing action (plan) to deliver results
 - c. Coordinating and validating objectives and plans
 - d. Trial run of programs
2. Workshop:

Participant will develop action plans to implement their anticipated objectives. Organizing resources and potential problem analyses will be conducted.

Fourth Day

1. Objective Control System
 - a. Implementing objectives
 - b. Feedback techniques
 - c. Diagnosis, troubles, and suggesting remedies
2. Workshop:

Participant will analyze developed plans to detect trouble spots and problem areas.

Fifth Day

1. Evaluation
 - a. Analyzing technique
 - b. Identifying future management planning
2. Critiques

Appendix C. Non-Numerical Forecast Methods

The Consensus Method -

The consensus method relies on opinions held by a group, committee, or conference concerning the future. It is a highly subjective approach and relies on both the experience and the intuition of the participants. Each individual contributes his opinion as to the improvements he deems necessary during some future time. He makes this contribution on the basis of problem trends he has observed or experienced. These data must be acknowledged to be biased and individualistic. But when several such individuals are brought together, the consensus approach combines and averages the contributions of each participant. Each contribution is a single estimate. The estimates are compared to find those that have high consensus. The coordination of the various estimates can help in deciding whether a single direction can be agreed to by the participants.

Obviously, the participants in the consensus method must be carefully selected for this activity, since each represents a resource for the improvement forecast. Participants may be assembled as homogeneous or heterogeneous groups. Homogeneous groups might consist entirely of executives, engineers, salesmen, foremen, or planners. Heterogeneous groups might consist of members from each of the homogeneous groups within or outside the organization. The selection and assignment of individuals to groups for consensus improvement forecasting will be governed by the nature of the forecast and the areas of improvement deemed critical.

The pooling of experience and judgment, the ease and simplicity of the contribution, and the involvement and participation of individuals who may ultimately set the objectives help to provide a motivational climate in which objectives can be most easily reached. The disadvantages of the approach — reliance on opinions, lack of objective data, and non-numeric averaging — must be weighed against these valuable advantages.

The Problem-Areas Method -

The problem-areas method starts with the identification of areas in which problems recur and are difficult to solve. This approach is critically needed in organizations practicing crisis management. Improvement forecasting using this involves an analysis of the types of problems, histories of these problems, problem trends, and probabilistic occurrences. Future solutions are searched for in order to eliminate these problem trends once and for all. This approach is also a grass-roots approach, since it involves examining the opinions, data, reactions, and reports in the areas where problems are generated. Probable improvements are solicited from those who are part of the problems, as well as from those who merely relate to the problems. The employment of outside consultants may also be most useful.

Problem definition is important before the search for improvements can begin. This involves an historical analysis of the problem to see what the record has been. Variables and constraints in terms of personnel, methods, equipment, facilities, and resources are identified for cause-effect relationships. It does not make sense for any objective-setting program to plan future improvements without addressing itself to current problems.

The Maximize Opportunity Method -

A careful study of existing and potential customers for information on expected consumption, purchases, and needs is another useful method for making improvement forecasts.

User-expectation surveys provide data and profiles from which opportunities for developing new products, new services, and other improvements can be identified.

The maximum opportunity approach focuses upon opportunities that are innovative for the organization. It searches outside the organization for improvements that would make the best use of internal resources. The improvement forecast is, in effect, an attempt to maximize resources by scanning possible applications outside the organization. In this respect, markets are not necessarily existing and ready to be exploited. Often, markets are created by merger, one organization devoting its underutilized resources to the unexpected applications for consumer use offered by the other organization. This is one reason that organizations pursue programs of acquisitions and mergers. True, it is often to supplement internal growth and complement existing activities, but in many cases it is a substitute for internal growth. Acquisitions are seen as quick means of spreading existing overhead, buying skillful management and technical know-how, and expanding through acquiring capital equipment and facilities.

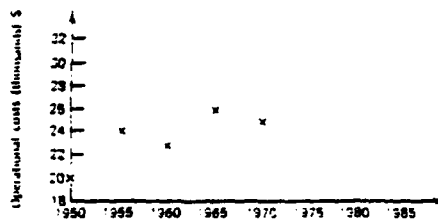
Improvement opportunities can be identified by any member of the organization's management. Making the future happen requires ideas — improvement ideas. The maximize opportunity method is a deliberate effort to organize brainstorming for innovative ideas. This is not to suggest that the MBO practitioner need be a creative genius like Edison, Sloan, or DuPont. Improvement ideas can range from breakthroughs that cause the organization to progress by leaps, to minor innovations that advance the organization by increments. Improvement forecasts, using the maximize opportunity approach, are made according to the following steps:

1. *Identify the totality of customer needs in a market.* This is accomplished through user-surveys, mail questionnaires, interviews, and telephone checks.
2. *Find customer needs that company can serve.* This is accomplished by removing from the totality of customer needs the needs that cannot be served.
3. *Link capabilities of company to needs that can be served.* Resources of the firm are identified and matched to needs that can be served. This matching takes into consideration the magnitude and timing of both customer needs and company resources.
4. *List constraints and limitations on matched needs.* This step involves identifying competitors, governmental constraints, community demands, and political influences.
5. *Arrange according to maximum opportunity the list of matched capabilities and customer needs.* Several criteria are used to find maximum opportunity. These are profits, return on investment, utilization of capacity, market penetration, company image, and product leverage.
6. *Formulate maximum opportunities as company objectives.* This is accomplished through the formal process of setting objectives.

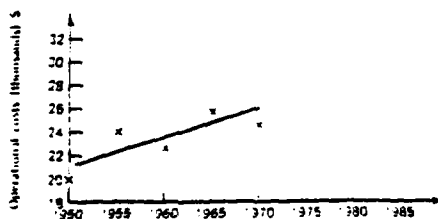
Graphical Extrapolation -

Graphical extrapolation is extending into future time the average line found by plotting past data patterns. The graphical scatter chart resulting from this plot shows both the individuality of each point and the general trend of all points, making it extremely useful in making improvement forecast decisions.

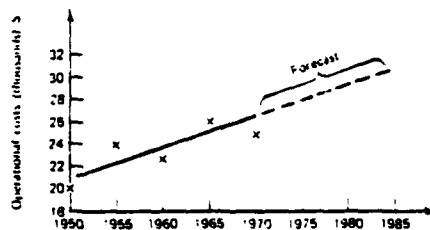
Step 1. Plot past data pattern to a time series. (Operational costs in years 1950, 1953, 1960, 1965, 1970 were 20, 24, 23, 26, 25 thousands, respectively.)



Step 2. Draw a line through the data that represent a visual averaging process.



Step 3. Extend the drawn line to the period to be forecasted. (Operational costs for 1985 estimated at 31 thousand.)



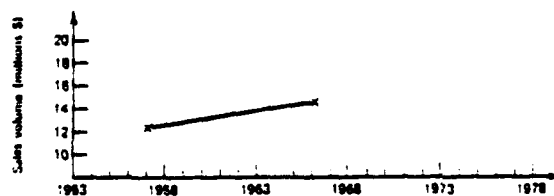
Semiaverage Method

Another simple numerical method that is not dependent upon an individual estimate is the semiaverage method. This makes use of the arithmetic mean (\bar{x}) for extending into future time a past data pattern.

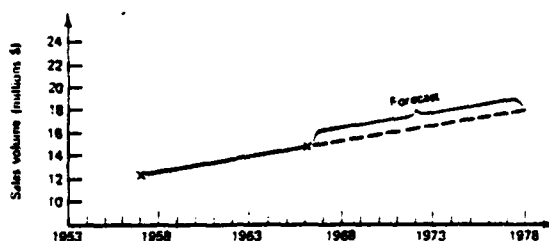
Step 1. Split past data pattern of a time series into two equal parts. Compute totals (Σx) for each half. Divide totals by number of years in each semiperiod (N).

Year	Sales Volume (Millions \$)	Semitotals	Semiaverage $\left(\bar{x} = \frac{\Sigma x}{N}\right)$
1953	10.0		
1954	10.5		
1955	11.2		
1956	12.0		
1957	13.4	→ 110.6	$\frac{110.6}{9} = 12.3$
1958	13.5		
1959	12.5		
1960	13.3		
1961	14.2		
1962	14.5		
1963	14.8		
1964	15.1		
1965	14.8		
1966	14.8	→ 137.9	$\frac{137.9}{9} = 15.3$
1967	15.2		
1968	16.0		
1969	16.1		
1970	16.6		

Step 2. Plot semiaverages and connect with a line.



Step 3. Extend the drawn line to the period to be forecasted. (Sales volume for 1978 estimated at 18 million.)



Method of Moving-Averages—

In the moving-average method, the trend is obtained by smoothing out the fluctuations of the past data pattern by means of a moving-average. To obtain a 5-year moving-average, the first 5 years are added. Each succeeding total is computed by omitting the first year of the preceding period and including the year that follows the last year of the preceding period. The moving-average is computed by dividing each 5-year total by 5.

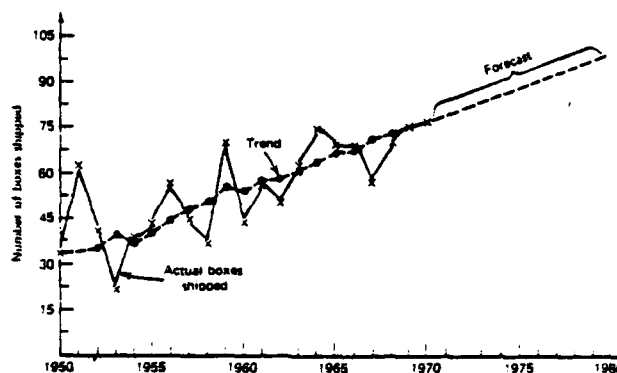
Step 1. Compute a series of moving totals by adding 5-year spans progressively (column 3).

Step 2. Compute an average for each total by dividing by 5 (column 4).

(1) Year	(2) Boxes Shipped (Number)	(3) 5-Year Moving Total	(4) 5-Year Moving- Average
1950	34	—	—
1951	62	—	—
1952	41	197	35.4
1953	22	207	41.4
1954	38	203	40.6
1955	44	207	41.4
1956	58	220	44.0
1957	45	252	50.4
1958	35	249	49.8
1959	70	276	53.2
1960	41	247	49.4
1961	55	274	54.8
1962	46	279	55.8
1963	62	306	61.2
1964	75	319	63.8
1965	68	331	66.2
1966	68	342	68.4
1967	58	343	68.6
1968	73	353	70.6
1969	76	—	—
1970	78	—	—

Step 3. Plot the actual data and the 5-year moving-average (the trend).

Step 4. Extend the trend line to the period to be forecasted. (Boxes shipped for 1980 is estimated at 100.)



Trend Method of Least Squares

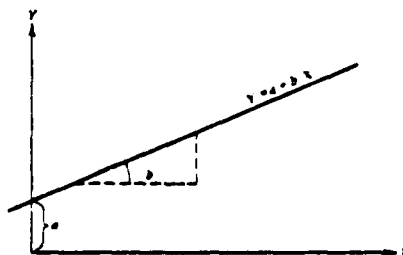
This method may be used to compute straight trend lines in a manner analogous to the three preceding methods. The main difference is that this approach uses a rigorous mathematical technique to determine the straight line. Estimates of trend are calculated in such a manner that the sum of squared deviations from actual data is at a minimum; hence the term *least squares*. It is based on the formula for a straight-line equation:

$$Y = a + bX$$

where

Y = the variable undergoing a trend
 X = the variable causing the trend

Since X is the independent variable, estimates of long-time trend may be calculated as soon as the values of a and b have been determined. This is illustrated with the following example: The number of field districts that report equipment failures follows a data series. It is required to estimate the number of failures when 20 districts are reporting.



- Step 1. Determine forecast for previous period F_{n-1} by calculating a simple average between 1962 and 1968.

$$F_{1962-68} = \frac{\sum X}{N} = \frac{44 + 48 + 36 + 62}{4} = 52.5$$

- Step 2. Establish actual value for the latest period before forecast (Y_{n-1}).

$$Y_{1970} = 66$$

- Step 3. Decide on value for smoothing constant (α).

$$\alpha = 0.8 \text{ (heavy weight given to recent values)}$$

- Step 4. Estimate the number of boxes to be shipped for 1972 with the exponential-smoothing forecast equation.

$$\begin{aligned} F_{1972} &= F_{1962-68} + .8(Y_{1970} - F_{1962-68}) \\ F_{1972} &= 52.5 + .8(66 - 52.5) \\ F_{1972} &= 63 \text{ boxes} \end{aligned}$$

Appendix D. Trouble Spots and Remedies

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|--|--|
| 1. Targeted objectives are pursued even though a change or desist is indicated. | Cause implementing objectives when unexpected changes render objectives unfeasible, irrelevant, or impossible. Select alternatives or contingencies from a situation action model and set up a desist time schedule. Revalidate. Communicate change to all participants. |
| 2. Targeted objectives are pursued even though an unexpected opportunity arises. | Reanalyze payoff of existing objectives in light of the new opportunity. If utility and value will be substantially greater, permit new targets to be set in lieu of prior commitments. Shorten time-span commitment if new opportunities arise frequently. |
| 3. The achieving of targeted objectives is emphasized at the expense of unspecified results. | Targeted objectives must be significant, critical, and high in priority. Keep the number of these objectives at a minimum and make it clear that unanticipated routine work must be completed. Routine work can be set up and written in terms of maintenance objectives or can be handled in a traditional way. |
| 4. Targeted objectives are expected in an unfairly short, or even unattainable, amount of time | Hold frequent progress conferences to clarify difficulties and reset levels of challenge. Hold frequent meetings for the purpose of removing obstacles to accomplishment. The MBO Rules for Stretching Performance and Performance Distribution Within a Group should guide setting the challenge level for attainability. |
| 5. Understanding of managing by objectives only exists on the lower levels of management. Top management gives lip service only to the effort. | Bring in an outside consultant to do an internal selling job. Distribute among top managers articles, studies, and books that deal with the systems approach to the strategy and the need for total management involvement and support. |
| 6. Objectives are written in terms of work activities rather than in terms of work results. | Set up training programs and workshop seminars for practice in writing objectives as results rather than as activities. Develop a manual that illustrates sample objectives similar to organization needs. Show how validation procedure can evaluate the wording of an objective. |
| 7. Compensation is geared strictly to results, regardless of outside influences. | Develop checklist of probable influences that may keep an individual from reaching results. Set up a policy for changing or modifying objectives if circumstances beyond anyone's control occur. Otherwise, compensation should be geared closely to results. |
| 8. Difficulty is experienced in setting measurable goals for staff personnel who assist line people to get their results. | Use two-way or three-way joint feeder-objectives. Objectives set for staff personnel should be set in a line context, and the score of results should be shared by both. Use MBO Rule for Interlocking Functions. |
| 9. Challenge level is juggled, in order to justify pay increases. | Use past records to validate performance stretch. Document performance history for comparison with similar jobs in the future to assure the mission of improvement. The 5 to 15 per cent progressive performance stretch should apply. |

10. Individual's or department's objectives are not interlocked with those of the whole organization.

Use concept of feeder-objectives and develop an objective network to show input and output contributions in the total system. Follow MBO Rule for Interlocking Functions.
11. Objectives are not attained, owing to circumstances beyond everyone's control.

Failure to attain objectives can provide useful guidelines for the next round of objective setting. Greater emphasis should be put on level of attainability and the probability of occurrence. Experience with risk factors should provide future guidance. Greater emphasis should be placed on the validation phase (step 3) if an organization is plagued with circumstances beyond everyone's control.
12. Employee participation is not a real commitment.

Allow employee to take an active role in the preliminary phases of decision-making. Identify and clarify his areas of accountability for the objectives set and the responsibilities of his job. Build motivators into areas of accountability.
13. There is an inability to get tough management with die-hard traditional approaches to managing to try managing by objectives.

Carefully select a project that can be set up as an objective program. Get agreement from management to implement the project using the MBO approach. Report the results of the project and contrast the advantages and disadvantages with the traditional way. Use the advantages to convince the previously unconvinced.
14. There is an unmanageable amount of paper work and red tape.

Some paper work must be tolerated. By keeping the number of objectives to the critical few necessary for performance stretches and quantum jumps, the paper work requirements will be kept to a minimum. Paper work shortcuts will develop with experience and knowledge of the system. Follow MBO Rule for Focus.
15. Objective performance evaluation will threaten the use and value of the conventional merit rating system or managerial trait technique.

Objective performance evaluation and merit evaluation serve the same purpose. The former emphasizes results, the latter emphasizes activities or traits. The merit system will be changed if not eliminated entirely. Some trait evaluation will be retained where it is clearly relevant to a manager's ability to get results. The practice of managing by objectives as a new strategy will cause an impact leading to change in existing practices. An organization must be prepared to make these changes.

16. Difficulty is experienced in quantifying targeted objectives; targets are written as traits or duties that merely sound like targets.

Writing good objectives is a skill developed through training and practice. Performance in every job can and must be measured. Skill can be developed through training programs, workshop seminars, and staff coaching. Special examples can be formulated as a guide for those needing special help. A guide manual can be useful.

17. Objective setting does not seem to fit in with highly specialized and technical work.

Objective setting fits into any kind of work package from which results are expected. The claims that a specialized situation cannot be results-oriented is not true; the situation needs to be reorganized and redefined in terms of getting results. This redefinition may involve shifting responsibility to an individual from a department or from an individual to a team or project.

18. There is an inability to get feedback of contributions and measurement of progress.

Feedback under MBO takes three forms. First, the individual observes and knows his own performance in relation to what is expected of him. Second, the individual gets periodic reports with evaluations of his overall performance. Third, the individual gets coaching, counseling, and appraisal reviews from his superiors who have first-hand knowledge from which to assess the work.

19. Objective-setting processes are time consuming and must be done after hours.

Objective setting is not extra work. It is part of the person's job to plan ahead, make improvements, and set deadlines. Time must be found during regular hours. Lack of time may be the result of the manager's setting objectives over too wide a range of job responsibilities. The chief value of managing by objectives is focus and concentration on the three or four areas most critical to the organization. The beginner at using the strategy should learn to crawl before he starts to run.

20. Difficulties arise in determining priority among a multiplicity of possible objectives.

Determine optimum alternatives by using decision matrix and payoff analysis in the situation action model.

21. There is an inability to get total management involvement owing to the fluidity and scattered nature of the organization.

Select task force to create a large matrix of alternatives and criteria. Allow individuals unable to involve themselves in the development of the matrix to select alternatives, and optimize them in terms of the individuals' needs and positions.

22. There is difficulty in deciding on entry points from which to begin the objective-setting process.

First enumerate clearly the many entry points possible for the organization:

1. Five-year profit plan
2. Top-down, bottom-up system
3. Budgetary approach
4. Common objective approach
5. Appraisal by results approach
6. Job descriptions approach

Carefully assess which entry points, either singly or in combination, are most likely to set down roots for the objective-setting process. An outside consultant can help.

23. There is an inability to implement MBO objectives at lower organizational levels.

A philosophy and understanding of the concept of managing by objectives must be provided to first-line supervisors before applied strategy and technique are discussed. They must see and understand managing by objectives as a managerial way of life. Training programs, seminars, and managerial coaching for first-line supervisors are an absolute must.

24. Management people are too overloaded with day-to-day production necessities to take the time to coordinate with other sections.

Setting objectives is a fundamental act of managing. Second to it is establishing the necessary confidence that reaching for objectives will be successful. Crisis managing develops when coordination with and confidence in other sections does not exist. The MBO Rules for Focus, Balancing Organizations, and Interlocking Functions should be followed. Assure that joint feeder-objectives exist in every department.

25. Objectives are set so low that the benefits do not justify the expenditure of effort and resources.

Estimate cost of reaching objectives and compare with benefits accrued. If benefits are not greater than cost, objective level must be raised for better results. Managing by objectives must exact a performance stretch from all employees.

26. An objective statement does not have a risk value; the degree of confidence in delivering results has not yet been determined.

Risk is high when uncertainty and low confidence prevail. Collect needed and relevant information and set up a decision tree to reduce uncertainty and raise confidence. Use past histories or information from other sources when nothing else is available.

27. Difficulty is experienced in equating compensation increments to basis of achievement.
Objectives having greatest pay-off or utility should be given greatest weight for rewards, both financial and nonfinancial. Subordinates must have in advance a clear understanding of the weight various job aspects will have in a final evaluation.
28. The time span in which objectives are to be achieved is too long to give a feeling of progress.
Using the feeder-objective approach, bridge long-range objectives by creating short-range milestones of progress. Each feeder-objective meets a target date that contributes toward an ultimate set of results. Follow MBO guidelines for long-range, short-range, and immediate-range forecasting for setting time span.
29. Action toward reaching objectives is at a low level and not intensive enough.
Subordinates probably were not involved in the objective-setting process and are most likely pursuing a manager's personal set of objectives. Get a subordinate to feel that a commitment of the organization is partly his doing, a result of his thinking and his decision. This goes a long way in getting him to deliver necessary results.
30. Original objectives are being reached, but there is an inability to deal with the changes that affect the objectives during the time intervals.
Set objectives for shorter periods of time. Forecast the changes that will occur during the time interval and build these into objectives as contingencies.
31. Independent setting of objectives by different departments results in objectives that are overlapping, conflicting, and out of sequence.
Use the validation procedure suggested in Chapter 5 to bring about alignment, interlocking, and network connection. The work breakdown structure serves as a guide to achieve coordination at varying levels.
32. There is difficulty in getting older persons who have been disillusioned in the past by new programs to become involved, participate in, and accept the MBO processes.
Reduce resistance and reluctance to participate by:
 1. Developing the climate. Circulate MBO books and magazines; use the organization newspaper; circulate successful cases; hold special presentations on managing by objectives.
 2. Providing knowledge and understanding of managing by objectives through training programs, seminars, consultants, an organization MBO manual, and books.
 3. Using certain people to set examples. Hire experienced MBO consultants; use managers who show leadership qualities for coaching and persuading.

4. Involving personnel. Allow experimentation and trial of managing by objectives with special projects that pose no great difficulty; allow personnel to try it with good coaching.

33. Objective-setting process seems to be practical only for certain sections or functions of the organization. It has little support in R & D because these groups feel that their creativity must be spontaneous.

The objective-setting process is applicable to areas of responsible creativity. Any R & D effort is intended to support an organization-wide effort to gain new or improved products and services for consumer markets. Responsible creativity is the only justification for R & D organizations. Objective-setting processes are attainable under these conditions.

34. Objectives based on a performance appraisal program achieve neither expected results nor management involvement.

Most appraisal programs are staff-conceived, organization-wide, and personnel-oriented. As such, they never become a significant part of the line managerial process or a managerial way of life. Instead of administering the MBO program from a staff department, decentralize and administer it among the various line departments.

The organizations that have had successful results with MBO strategy and have overcome trouble spots have done so because their supervisors and managers were not only familiar with the strategy's rationale and procedure, but also were willing to put forth effort and time needed to make it work.

Appendix E. Pitfalls and Treatment

Pitfall	Symptoms	Description	Treatment
(1) Busy! Busy!	(A) Never get around to taking time to get started. (B) Feel rushed in interviews with employees. (C) Feel like you have more important things to do.	It is a common occurrence for a manager to feel that other things are more important. But ask yourself what is more important than getting the best performance from your personnel.	(a) Better scheduling of your time -- set up blocks of time to work on the program. (b) Assign someone else to handle the problems while you are working on the program.
(2) You change -- I won't.	(A) Telling employees to change. (Telling implies you are using old system.) (B) No (or little) cooperation from employees.	You can talk a good story about the system as it involves the individual, but you must also practice it.	(a) Don't tell -- ask. (b) Listen and allow the employee to respond. (c) Let the employee carry most of the burden of the interview.
(3) Perfectionist	(A) Endless hours of discussions, rehashing and reworking. (B) Hung up on small parts of job and expected results.	Performance planning and review is not a foolproof system. It is at best an improvement over old-type systems. Going into infinite detail will strangle the program.	(a) Accept fairly broad generalities. (b) Don't expect a perfect system the first time around. (c) Don't let yourself be dragged into detail pits -- stay on top.

Pitfall	Symptoms	Description	Treatment
(4) Once and for always	(A) Never give in on any points. (B) Once individual plan is set up, never change it. (C) Hold each person to the letter of the plan.	Performance plans must be flexible. Conditions change and so should the plan. No change can mean no improvement.	(a) Agree to reasonable changes. (b) Encourage employees to suggest changes in the plan. (c) Think about conditions that might change the plan.
(5) Copy Cat	(A) Always looking at other plans to copy so you won't have to think it through yourself. (B) Trying to make as many plans fit a group pattern so they are all alike.	Performance plans will have many similar elements, but the basic expected results will almost always be different.	(a) Regard each plan as separate and distinct. (b) Avoid referring to other plans except as a general guide. (c) Let the employee develop his own plan — this will assure its originality.
(6) That's the system I've always used.	(A) Nothing new to you — you already know how it works. (B) No one can tell you about the program.	Many managers feel they already know how the system works. In fact, they don't! Some elements are a part of most managers' jobs — most are new.	(a) Listen, learn, then decide. (b) Search for parts and ideas which may be new to you.

Pitfall	Symptoms	Description	Treatment
(7) Definitions Hang-up	<p>(A) Employees keep asking for definitions and explanations of what you mean when you use certain words, e.g., expected results.</p> <p>(B) Doubts about definitions begin to creep into your thinking. You try your hand at redefining the titles.</p>	<p>Getting language which everyone agrees to and understands is almost impossible. Attempting to define points to satisfy all people will create distrust of the system.</p>	<p>(a) Explain concepts; don't try to define expressions — use examples instead.</p> <p>(b) Let employee define it any way he prefers as long as you get the end result. An expected result by any title is an expected result.</p>
(8) Too Hard to Understand	<p>(A) Employees can't get it through their heads what you're trying to do.</p> <p>(B) You get hung up on specific parts of the program.</p>	<p>Reluctance and resistance are often manifested by playing dumb. People who don't want to learn can find reasons not to learn. Change is the order of the day.</p>	<p>(a) Recognize when employees are resisting change.</p> <p>(b) Confront those who do not want to change. Tell them you understand how they feel. Go through each of the stages in asking them to change over to the new system.</p>

APPENDIX F

GLOSSARY OF TERMS AND ABBREVIATIONS

AFCC - Air Force Component Commander

AFCH - Air Force Component Headquarters

ALCC - Air Lift Control Center

ALCE - Air Life Control Element

ASRT - Air Support Radar Team

ATC - Air Training Command

AWACS - Airborne Warning and Control System

CCT - Combat Control Team

CRC - Control and Reporting Center

CRP - Control and Reporting Post

DASC - Direct Air Support Center

FAC - Forward Air Controller

FACP - Forward Air Control Post

MBO - Management by Objective

SRP - Sensor Reporting Post

TAC - Tactical Air Command

TACC - Tactical Air Control Center

TACP - Tactical Air Control Party

TACS - Tactical Air Control System

TACW - Tactical Air Control Wing

TAWAC - Tactical Airborne Warning and Control System

TROPO - Tropospheric

TUOC - Tactical Unit Operating Center